

Additional time spent outdoors by children results in decreased rate of nearsightedness

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The addition of a daily outdoor activity class at school for three years for children in Guangzhou, China, resulted in a reduction in the rate of myopia (nearsightedness, the ability to see close objects more clearly than distant objects), according to a study in the September 15 issue of *JAMA*.

Myopia has reached epidemic levels in young adults in some urban areas of East and Southeast Asia. In these areas, 80 percent to 90 percent of [high school graduates](#) now have [myopia](#). Myopia also appears to be increasing, more slowly, in populations of European and Middle Eastern origin. Currently, there is no effective intervention for preventing onset. Recent studies have suggested that time spent outdoors may prevent the development of myopia, according to background information in the article.

Mingguang He, M.D., Ph.D., of Sun Yat-sen University, Guangzhou, China, and colleagues conducted a study in which children in grade 1 from 12 primary schools in Guangzhou, China (six intervention schools [n = 952 students]; six control schools [n = 951 students], were assigned to 1 additional 40-minute class of outdoor activities, added to each school day, and parents were encouraged to engage their children in outdoor activities after school hours, especially during weekends and holidays (intervention schools); or children and parents continued their usual pattern of activity (control schools). The average age of the children was 6.6 years.

The 3-year cumulative incidence rate of myopia was 30.4 percent (259 cases among 853 eligible participants) in the intervention group and 39.5 percent (287 cases among 726 eligible participants) in the control group. Cumulative change in spherical equivalent refraction (myopic shift) after 3 years was significantly less in the [intervention group](#) than in the control group.

"Our study achieved an absolute difference of 9.1

percent in the incidence rate of myopia, representing a 23 percent relative reduction in incident myopia after 3 years, which was less than the anticipated reduction. However, this is clinically important because small children who develop myopia early are most likely to progress to high myopia, which increases the risk of pathological myopia. Thus a delay in the onset of myopia in young children, who tend to have a higher rate of progression, could provide disproportionate long-term eye health benefits," the authors write.

"Further studies are needed to assess long-term follow-up of these children and the generalizability of these findings."

Michael X. Repka, M.D., M.B.A., of the Johns Hopkins University School of Medicine, Baltimore, comments on the findings of this study in an accompanying editorial.

"Future studies should include information about the content of the additional outdoor activity, if the activity could be standardized, and how it differs from other studies. This information could guide further study and implementation of outdoor activities in the school setting. Establishing the long-term effect of additional outdoor activities on the development and progression of myopia is particularly important because the intervention is essentially free and may have other health benefits."

"Given the popular appeal of increased [outdoor activities](#) to improve the health of school-aged [children](#) in general, the potential benefit of slowing myopia development and progression by those same activities is difficult to ignore. Although prescribing this approach with the intent of helping to prevent myopia would appear to have no risk, parents should understand that the magnitude of the effect is likely to be small and the durability is uncertain."

More information: DOI:

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