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Original article

Outdoor Activity during Class Recess Reduces Myopia Onset and Progression in School Children

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Purpose

The aim of this study was to investigate the effect of outdoor activity during class recess on myopia changes among elementary school students in a suburban area of Taiwan.

Design

Prospective, comparative, consecutive, interventional study.

Participants

Elementary school students 7 to 11 years of age recruited from 2 nearby schools located in a suburban area of southern Taiwan.

Intervention

The children of one school participated in the interventions, whereas those from the other school served as the control group. The interventions consisted of performing a recess outside the classroom (ROC) program that encouraged children to go outside for outdoor activities during recess. The control school did not have any special programs during recess.

Main Outcome Measures

Data were obtained by means of a parent questionnaire and ocular evaluations that included axial length and cycloplegic autorefraction at the beginning and after 1 year.

Results

Five hundred seventy-one students were recruited for this study, of whom 333 students participated in the interventional program, and 238 students were in the control school. At the beginning of the study, there were no significant differences between these 2 schools with regard to age, gender, baseline refraction, and myopia prevalence (47.75% vs. 49.16%). After 1 year, new onset of myopia was significantly lower in the ROC group than in the control group (8.41% vs. 17.65%; $P < 0.001$). There was also significantly lower myopic shift in the ROC group compared with the control group ($\hat{\Delta}^{\wedge}0.25$ diopter [D]/year vs. $\hat{\Delta}^{\wedge}0.38$ D/year; $P = 0.029$). The multivariate analysis demonstrated that the variables of intervention of the ROC program and higher school year proved to be a protective factor against myopia shift in nonmyopic subjects ($P = 0.020$ and $P = 0.017$, respectively). For myopic subjects, school year was the only variable significantly associated with myopia progression ($P = 0.006$).

Conclusions

Outdoor activities during class recess in school have a significant effect on myopia onset and myopic shift. Such activities have a prominent effect on the control of myopia shift, especially in nonmyopic children.

Financial Disclosure(s)

The author(s) have no proprietary or commercial interest in any materials discussed in this article.



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