NEWSLETTER

Can Physical Exercise Promote the Development of Teenagers' Cognitive Ability?

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A STUDY published in *Journal of East China Normal University (Educational Sciences)* explored the relationship between physical exercise and the student's cognitive ability. The study selected variables related to the student's cognitive ability from the China Education Panel Study (CEPS), taking the daily average exercise duration of students as the core independent variable, and setting the cognitive ability test score of students as the dependent variable. The researchers used techniques such as the Least Square Regression, Propensity Score Matching, Quantile Regression to explore the influence of physical exercise on students' cognitive ability. The results are as follows:

- The result of the Least Square Regression shows that the standard score on the cognitive ability test of the adolescents who exercise more than 3 days a week was 0.149 points higher than those who exercise less. While after controlling the pre-ability, the standard score on the cognitive ability test increases 0.049 points every time the exercising time increases per unit.
- Quantile Regression indicates that engaging in physical exercise has the most significant promoting effects on teenagers with a median score, and spending more time exercising will not widen the gap of low-high cognitive with the same group. What's more, encourage teenagers with the low cognitive ability to actively participate in physical exercise is helpful to narrow the gap of teenagers' cognitive ability within the group.
- According to the Propensity Score Matching results, frequently participate in physical exercise improves 0.095-0.117 points on the test, which was lower than the 0.149 in the baseline regression, suggesting that the net effect of physical exercise would be overestimated if the selective bias was ignored.

Based on this, the researchers believe that physical exercise can not only help build a strong body for teenagers but also improve their

cognitive ability to some extent. In family education, parents should abandon the traditional concept of "academics comes first" and form a beneficial closed-loop of "encouragement, support, guidance and feedback" for teenagers to participate in physical exercises.

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