

Exercise and cigarette smoking transitions among U.S. White middle and high school students

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One year prospective cohort study was conducted to explore the interrelationship between exercise levels and smoking behavior among U.S. White middle and high school students. The data set was the in-home interview Wave I and Wave II data from National Longitudinal Study of Adolescent Health(Add Health) conducted from 1995 to 1996, which is U.S. national representative sample of 7th-12th graders. Among 14,620 adolescents followed up(70.5% of Wave I), the number of eligible White students was 7,268. Among those, never smokers were 2,900(39.9%), and current smokers were 2,264(31.2%).

Among male nonsmokers, those who engaged in medium(OR=1.71, $p<0.05$) and high level exercise(OR=1.91, $p<0.01$) were more likely to initiate smoking compared with those who engaged in low level exercise. Among female nonsmokers, male and female current smokers, exercise levels did not predict the smoking transitions. In terms of the effect of smoking on exercise, male current smokers were more likely to decrease in exercise level from high level exercise compared with never smokers(OR=1.50, $p<0.05$). Among females, current smokers were less likely to increase in the exercise level from low level exercise(OR=0.64, $p<0.05$), and from medium level exercise(OR=0.62, $p<0.05$) compared with never smokers.

The results showed that exercise did not act as a protective factor for smoking initiation or maintenance among U.S. White students. It is possible that the negative relationships between exercise and smoking in previous cross-sectional studies resulted from the inhibitory effects of smoking on exercise, not from the protective effects of exercise on smoking.

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