

Participation in organized high school activities lowers risk of smoking 3 years after graduation

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Researchers from the Abramson Cancer Center of the University of Pennsylvania reported today that students who participate in high school sports or individual physical activity are less likely to smoke than their classmates. The new study indicates that the protective effect of participation extends at least three years beyond graduation. The Penn team discovered, however, that girls do not derive the same level of protection from school sports as do boys.

Daniel Rodriguez, PhD, Research Assistant Professor of Psychiatry at the University of Pennsylvania School of Medicine, reported that an adolescent's self-assessment and sense of physical competence was an important aspect in smoking prevention. Students who feel successful continue to participate and are less likely to start negative behaviors. "I visualize this as a fork in the road," Rodriguez said. "If you are successful, then you continue doing sports. If you are not successful, then you are now in need of other reinforcement and start looking for other things. In that case, things like smoking become open to you."

Given the data, Rodriguez recommends that parents make an effort to get their children involved in organized activities – whether it is a physical sport, like track and field, or some other organized activity, like the chess team – and that they teach them how to properly evaluate their own skills. It is important that children learn to compare their current skills or performance to their past performance and not to that of their teammates or opponents. That way they can feel good about their skills, even if they are not the best at something.

Rodriguez, PhD, and colleagues in the NIH-funded Transdisciplinary Tobacco Use Research Center at

the University of Pennsylvania have shown previously that adolescents who are physically active are about one-third less likely to start smoking than their less active peers.

Now, in the first of two studies that Rodriguez will present at the American Association for Cancer Research's "Frontiers in Cancer Prevention Research" meeting in Philadelphia, the investigators followed 985 young adults from 12th grade through the third year after high school. As expected, the young adults who participated in high school sports or individual physical activity were significantly less likely to smoke than their non-active peers. Physical activity reduced the likelihood of smoking 12% by improving the adolescents' perception of their physical self. By contrast, team sports reduced smoking 18% by improving their perception of their physical self and reducing contact with peers who smoke. Remarkably, the benefit of participation was still evident three years after graduation.

In the second study 384 high school students, Rodriguez found that participation in a team sport during 10th grade reduced the risk of smoking in 11th grade by 5%. In this case, the reduced smoking was due to an increased feeling of competence in their sport and fewer depressive symptoms in students who were on teams.

"Most smoking initiation occurs during adolescence," Rodriguez said. "So if you can make it out of that adolescent period, and you have a sport to buffer you from smoking during that period, you're pretty safe."

Given that team sports reduces a student's risk of smoking by both increased confidence in his or her physical self and by decreasing contact with peers who smoke, Rodriguez hypothesizes that physical

activity may not be the key factor. Rather the student's environment and his or her feelings of success keep a student from starting to smoke. "A structured activity keeps a student away from negative influences. It is not inconsistent for you to be physically active and smoke, but when you are part of a team, you are just not exposed to smoking. You don't have the opportunity to do something like start smoking."

Unfortunately, the Penn researchers found in the study of 10th and 11th graders that girls do not derive the same benefit from participation in high school sports as do boys.

Exactly why that gender difference exists is not yet clear, according to Rodriguez, but knowing there is a difference will help him and his colleagues look for smoking prevention measures that do work for girls.

Source: University of Pennsylvania School of Medicine

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