# Science education on drugs of abuse: A model for prevention

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# Goal of the presentation

The goals of this presentation are to:

- Present science education on drugs of abuse as an innovative method to infuse prevention information into a crowded school curriculum
- Discuss the evaluation of one science education curriculum
- Apply the findings from this evaluation to future research

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# Background

- Adolescent substance abuse remains a significant public health problem.
- Universal prevention has demonstrated effectiveness in reducing teen drug use.
- However, school-based prevention has declined significantly in recent years.
- Innovative approaches are needed.

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# Theory

- Science education offers a unique opportunity to infuse persuasive health information into core curricula
- Science education differs from prevention in two ways:
  - Matched to state and local standards of learning
  - Presents factual information about drugs without admonitions against use.
- The Theory of Reasoned Action provides a model to predict how science education can function as prevention.

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# Methodology

- Pretest/Post-test quasi-experimental design
  - Sixth, seventh and eighth grade students
  - Eight charter schools in NC, TN and TX participated
- Two group design (treatment/control) with random assignment
- Measures: Knowledge and attitudes (about drugs and science)
- Analysis: descriptive and multivariate

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# The Curriculum

- Six-lesson curriculum on the brain, drugs, and how drugs change the brain
  - Multimedia based
  - Includes information on many classes of drugs
  - Each lesson is self-directed and took approximately 45 minutes to complete
  - Aligned with state and national standards of learning in the science curriculum
- Funded by the National Institute on Drug Abuse

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# Research Questions

- How did knowledge of science and drugs change from pretest to post-test?
- What is the effect of the multimedia curriculum on knowledge change?
- How do factors such as protective attitudes toward drugs relate to change in knowledge?
- What is the statistical effect of the curriculum on knowledge change, controlling for other key factors such as grade, gender and race?

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# Findings

- Experimental group gained considerable knowledge between pretest and post-test
  - Participants in the control group saw very little change in knowledge from pre- to post-test
- The curriculum was relatively ineffective in changing attitudes about drugs of abuse
  - Attitudes were highly protective at pretest (87%)
  - Evidence that attitudes may have an indirect impact on performance

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# Findings (continued)

- Bias in the survey populations suggested using an OLS approach to statistically isolate the effect of the curriculum.
- Receipt of the curriculum is the strongest predictor of change in knowledge about the effects of drugs on the brain and body.
- Other factors were also significant:
  - Older students scored higher in knowledge change
  - Students in NC scored lower

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# Implications

- Science education curricula such as the curricula presented in this paper offer a potentially effective method to infuse persuasive health information into the core curriculum
- Research is ongoing to tease out the relationship between knowledge change and attitudes.

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