

# Initial reaction to nicotine can dictate addiction

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Following up on studies that have indicated the speed with which adolescents can get hooked on cigarettes, researchers at the University of Massachusetts Medical School have conducted the first study to determine why some adolescents who try smoking get addicted while others do not.

“We know that nicotine can have an immediate impact on the brain, and yet we also know that not every adolescent who tries a cigarette gets hooked,” said the study’s lead author, Joseph R. DiFranza, MD, professor of family medicine & community health at UMMS. “We wanted to know what accounts for the difference in vulnerability among adolescents who pick up that first cigarette.”

While personality factors often determine which young people will try smoking, it appears that it is the manner in which the brain reacts to nicotine, rather than personality, that is most important to determining whether an adolescent will become hooked on nicotine once he or she has tried it. “It appears that it is an addictive physiology and not an addictive personality that determines who will become dependent,” observed Dr. DiFranza.

The four-year prospective study was based on over 12,000 interviews with 1,246 sixth-graders in public schools in six Massachusetts communities. Researchers assessed 46 risk factors in categories such as personality, attitudes and beliefs about smoking, smoking by parents, siblings and peers, family and community involvement, and reactions to

inhaling from a cigarette for the first time. When all factors were considered together, an experience of relaxation in response to the first dose of nicotine was the strongest predictor of future addiction. Other factors that predicted addiction were familiarity with the cigarette advertising character Joe Camel, a novelty-seeking personality, and a depressed mood.

“These findings underscore our belief that the development of dependence is triggered by the changes in brain chemistry that follow the very first dose of nicotine,” said DiFranza.

Source: University of Massachusetts

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