Electronic Nicotine Delivery Systems

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ABSTRACT: Electronic nicotine delivery systems (ENDS) are rapidly growing in popularity among youth. ENDS are handheld devices that produce an aerosolized mixture from a solution typically containing concentrated nicotine, flavoring chemicals, and propylene glycol to be inhaled by the user. ENDS are marketed under a variety of names, most commonly electronic cigarettes and e-cigarettes. In 2014, more youth reported using ENDS than any other tobacco product. ENDS pose health risks to both users and nonusers. Nicotine, the major psychoactive ingredient in ENDS solutions, is both highly addictive and toxic. In addition to nicotine, other toxicants, carcinogens, and metal particles have been detected in solutions and aerosols of ENDS. Nonusers are involuntarily exposed to the emissions of these devices with secondhand and thirdhand aerosol. The concentrated and often flavored nicotine in ENDS solutions poses a poisoning risk for young children. Reports of acute nicotine toxicity from US poison control centers have been increasing, with at least 1 child death reported from unintentional exposure to a nicotine-containing ENDS solution. With flavors, design, and marketing that appeal to youth, ENDS threaten to renormalize and glamorize nicotine and tobacco product use. There is a critical need for ENDS regulation, legislative action, and counter promotion to protect youth. ENDS have the potential to addict a new generation of youth to nicotine and reverse more than 50 years of progress in tobacco control.

Journal:

Pediatrics
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