



SOCIETY OF
PEDIATRIC NURSES

SPN Position Statement

Children, Adolescents, and Families' Exposure to E-Cigarettes, Nicotine, and Tobacco Smoke in the United States

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In the United States, tobacco smoking remains the leading cause of preventable death (National Center for Chronic Disease Prevention and Health Promotion [NCCDPHP], 2020; Gentzke et al., 2020). Tobacco smoking has been on a steady decline for both adults (1970-2020) and youth (1985-2015); however, with the introduction of e-cigarettes, there has been a significant increase in tobacco use by middle and high school-aged children (Gentzke et al., 2019). The use of e-cigarettes under the age of 14 is associated with a higher likelihood of initiating tobacco smoking and creating another generation addicted to tobacco (Lee et al., 2021).

The primary addictive component of tobacco-related products is nicotine (liquid nicotine for e-cigarettes). Repeated nicotine exposures become associated with daily environmental cues, producing long-term changes in dopaminergic signals in the reward/reinforcement brain centers that eventually result in addiction (American Academy of Pediatrics [AAP], 2017). Children and adolescents are particularly susceptible to nicotine addiction; the earlier someone becomes addicted to nicotine, the more difficult it is for them to stop (AAP, 2019). Tobacco uses early in life is associated with neurophysiologic dependence due to the child's rapidly developing brain (AAP, 2017). The intake of nicotine, combined with rapid neural changes in adolescents, can increase the likelihood of developing physical dependence and greater difficulties with cessation (Townsend et al., 2017). Due to the rapid advances in nicotine delivery products, pediatric nurses must keep abreast of new products available to youth.

There is *no safe level* of tobacco exposure, either through personal use, secondhand smoke, or thirdhand smoke (AAP, 2015). Tobacco smoke is a known carcinogen associated with disease and death in smokers and nonsmokers (NCCDPHP, 2020). While parents are responsible for over 90% of children's exposure to tobacco smoke, other relatives living in the household may also contribute. Secondhand smoke exposure is considered side stream smoke; a mixture of

chemicals emitted in smoke from a burning cigarette, as well as the smoke exhaled from the lungs of smokers (Kleier et al., 2017). Thirdhand smoke is the byproduct of tobacco smoke pollutants that attach and accumulate on surfaces (e.g., clothing, hands, furniture) (Mahabee-Gittens et al., 2019). Children may have thirdhand exposure from contact surfaces, and preschool children, given their hand-to-mouth practices, may be more likely to ingest nicotine from surfaces (Northrup et al., 2019). Tobacco smoke in indoor areas (e.g., homes, hotel rooms, cars, etc.) produces poor air quality due to increased levels of particulate matter (Bohac et al., 2017; McEvoy & Spindel, 2017). Adverse health outcomes linked to tobacco smoke exposure for the developing fetus include congenital malformations and preterm birth. Adverse health outcomes related to tobacco smoke and e-cigarette exposure for infants and children include sudden infant death syndrome (SIDS), cancer, childhood obesity, asthma, otitis media, pulmonary diseases, and neurocognitive problems (McGrath-Morrow et al., 2020).

Additives in cigarettes (e.g., menthol) and e-cigarettes (e.g., flavorings) make tobacco appealing (AAP, 2017; NCCDPHP, 2020). E-cigarettes are marketed to entice youth to buy them and falsely advertise that they are safer than cigarettes (AAP, 2019). Health risks associated with e-cigarettes and nicotine include the potentially toxic substances and carcinogens found in vaping liquids which may cause damage to the lungs and brain and potentially even result in death (AAP, 2019; Sommerfield et al., 2018).

Children are at greatest risk of liquid nicotine poisoning due to their increased metabolic rate and growth and development level. Since 2011, there have been increased calls to poison control centers related to liquid nicotine. Liquid nicotine poisoning can occur through ingestion, skin contact, or inhaling too much vapor (American Association of Poison Control Centers [AAPC], 2017). Exposure to liquid nicotine can cause seizures, bradycardia, and hypotension that may eventually be fatal. The Child Nicotine Poisoning Prevention Act of 2015 was signed into law to ensure manufacturers created child protective packaging for liquid nicotine products.

The Society of Pediatric Nurses (SPN) supports sustained implementation of proven population-based strategies as outlined by the AAP public policy statements (2015, 2019), a report from the Surgeon General (U.S. Department of Health and Human Services [USDHHS], 2020), the National Center for Chronic Disease Prevention and Health Promotion report on smoking and tobacco use (2020), and the World Health Organization's (WHO) (2021) report on the global tobacco epidemic.

SPN's Position

1. Encourage and increase access to smoking cessation programs for at-risk youths and families, including mental health well-being services.
2. Advocate for social/environmental changes to reduce youth's secondhand and thirdhand smoke exposure.
3. Support FDA and legislative efforts for continued warning advertisements on tobacco-related product packaging.

4. Support local and state initiatives to limit tobacco product advertisement in general population areas.
5. Encourage agencies to implement tobacco usage screening measures in care management coordination.
6. Develop partnerships among healthcare agencies (e.g., children's hospitals, community hospitals), community and social service agencies, advocates, and children and their families to ensure communication of needs, the provision of resources, and service delivery to vulnerable populations of children.

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