

Update: Risks Associated with E-cigarette and Vaping Products

The U.S. Food and Drug Administration has issued a consumer warning regarding unproven health benefit claims related to the use of vaping products. The Michigan Poison and Drug Information Center (MiPDC) notes that vaping products marketed with claims to help treat cancer, improve mental health, or help with treatment for chronic respiratory conditions are fraudulent.¹ The MiPDC supports messaging from the FDA warning the public of these claims.

In 2021 the National Youth Tobacco Survey (NYTS) conducted by the US Centers for Disease Control and Prevention's (CDC) National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), concluded that use of e-cigarettes among youth, specifically in middle and high schools, remains high. More than two million adolescents in the US use e-cigarettes and most use flavored e-cigarette products. NYTS results determined 43.6% of high school students and 17.2% of middle school students used these products for at least 20 days each month. The US Food and Drug Administration (FDA) continues to act against e-cigarette manufacturers who market products to youth.²

The US Surgeon General has determined that use of e-cigarettes is an epidemic among youth. Nicotine use in teens and young adults can cause long-term health effects. Nicotine addiction is associated with mood disorders, impulse control issues, and impaired learning. Inhaling nicotine and other chemicals found in vaporized e-liquids can cause damage to the respiratory system. Diacetyl, which is used to flavor e-liquids, has been associated with serious lung injuries.³ In 2018, more than 14 million middle school and high school students had seen e-cigarette advertising in stores, on the Internet, and via television, movies, and magazines. Additionally, availability of e-liquids flavored like candy, fruit, chocolate, and other sweets are packaged in bright colors and appealing designs. Approximately 68% of high schoolers who use e-cigarettes use products with added flavors.

Vaping devices and e-cigarettes are electronic nicotine delivery systems (ENDS) used to heat and vaporize liquids so vapors can be inhaled. The liquids used to deliver nicotine or tetrahydrocannabinol (THC), the main psychoactive compound in marijuana, are of significant concern. E-liquids may contain propylene glycol, vegetable oil, vitamin E acetate, and a multitude

¹ (U.S. Food and Drug Administration, 2021)

² (Center for Disease Control and Prevention, 2021)

³ (Surgeon General of the United States Public Health Service, 2020)

of other potentially harmful ingredients. Nicotine content in these products is concerning as e-liquids may contain higher amounts of nicotine than advertised on labels.⁴ Over the preceding 12 months, the Michigan Poison and Drug Information Center (MiPDC) has received 231 calls regarding exposures to e-cigarettes and other vaping-related exposures. This is an increase from 156 calls reported in our last update from June, 26, 2021, regarding e-cigarette and vaping product exposures over the previous ten-month period.

Individuals who choose to vape are at risk for significant adverse health effects. Symptoms may develop over a short period of time and may include abdominal pain, nausea, vomiting, diarrhea, coughing, chest pain, and shortness of breath. Users who develop any of these symptoms are at risk for, or may already have developed, electronic vaping-associated lung injury (EVALI) and should seek medical care immediately. Severe lung injuries have occurred in teenagers and young adults with the use of vaping devices and liquids. Vitamin E acetate has been implicated in the development of EVALI. In 2019, the CDC conducted a study on 29 patients with EVALI across 10 states. Vitamin E acetate was detected in all 29 samples.⁴ There are no assurances any vaping product is risk-free. Due to lack of regulations surrounding vaping products, it is difficult to even determine which products may be responsible for resulting harm.

On December 20, 2019, legislators enacted the Tobacco 21 law. It is the responsibility of all retailers selling tobacco and nicotine-containing products to verify purchasers are over the age of 21 years. In February 2020, the FDA implemented a partial ban on the sale of flavored tobacco and nicotine-containing products limiting flavors to menthol and tobacco. This ban does not extend to open tank vaping systems. Restrictions vary by state.⁵

For those with questions regarding the health risks and false claims related to e-cigarettes and vaping liquid products, please contact your health care professional or call the MiPDC for more information. Our Specialists in Poison Information and Board-certified toxicologists are available to address your concerns and questions 24-hours a day, 365 days a year at **1-800-222-1222**. Local callers can reach the MiPDC by dialing 1 (313) 486-0078.

⁴ (U.S Food & Drug Administration, 2020)

⁵ (Elizabeth Cowan, 2020)