

Fact Sheet

The Smoking and Health Action Coalition (SHAC) is one of twenty-five statewide Advancing Tobacco-Free Communities contractors working to change the community environment to support New York State's tobacco-free norm. Research in this field reflects the following facts:



The U.S. Surgeon General's report acknowledge e-cigarettes are not safe.

- E-cigarettes contain dangerous and harmful ingredients; including carcinogens and cancer-causing chemicals such as formaldehyde, diethylene glycol, propylene glycol, glycerin, and benzene. Toxic metals such as tin, nickel, cadmium, lead, and mercury have been found in e-cigarette aerosol, sometimes occurring in concentrations 2 to 100 times that of cigarettes.
- The cytotoxicity of e-liquids varies as most are contaminated with chemicals. Depending on the flavor profiles some e-cigarettes are more toxic and contain more cytotoxins than others based on the chemicals and carcinogens used to make these flavors.
- Studies have proven that mostly all e-cigarettes deliver and contain highly addictive nicotine. Sales data from e-cigarettes reveals that 99.6% of disposable e-cig sales contained nicotine, 100% of rechargeable e-cig sales contained nicotine, and 99.5% of refill sales contained nicotine.
- E-cigarettes typically use a battery, as a heating element, and work as a heating device to turn e-cigarette liquid into vapor; the liquid is usually made of nicotine, flavorings, and other chemicals. The liquid heating process creates an aerosol which users inhale into their lungs; bystanders can also breathe in this aerosol when the user exhales the air. There is an increased amount of chemicals delivered to the user upon inhalation depending upon how hot the e-liquid is heated.
- E-cigarettes are named e-cigs, e-hookahs, mods, vape pens, vapes, tank systems, and electronic nicotine delivery systems (ENDS). E-cigarettes are made of all shapes and sizes, some resemble pens or USB sticks. E-cigarettes can be used to deliver marijuana and other drugs.

E-cigarettes are now the most commonly used form of tobacco among youth.

- Many youth are uninformed of the dangers of these products. Studies reveal most young adults are unaware of what e-cigarettes or e-juice liquid is made of; they perceive these products as containing zero nicotine or may not know what nicotine is.
- In New York, e-cigarette use by high school students doubled from 10.5% in 2014 to 20.6% in 2016. Nationally, it escalated 900% from 2011 to 2015. In 2017, an alarming

20% of all Monroe County youth reported using e-cigs in the past 30 days as opposed to 5% for cigarettes and 8% for cigars. Roughly 30% of youth have tried an e-cigarette in their lifetime.

- Youth access these products through social circles and networks, often purchasing these from 18 years old students who distribute these products for sale at the schools. The appearance that these products are deemed “cool”, “popular”, “flavorful”, and “safe” led to an increased acceptance of these products among youth-centered cohorts and social scenes. Youth have been glamorizing and accepting these products as normal, although they contain dangerous chemicals, nicotine, and flavorings.

Vaping and e-cigarette use include other potentially dangerous risk from usage.

- Youth who handle E-liquid juice risk serious and detrimental health impacts due to potential ingestion of liquid nicotine, chemicals, and potential skin contact with the liquid.
- Users are at risk for battery explosions caused by an increase in internal battery temperature, fires caused by vaporized malfunction, and explosions from extended charging. There have been numerous cases where these devices have been known to explode and cause bodily harm, injury, and burns.
- Users are also at risk for popcorn lung, which is an irreversible lung disease that leads to coughing, wheezing, and shortness of breath symptoms due to a scarring of air sacs in the lungs that result from thickening and narrowing of the airways.

Young children are especially susceptible to e-cigarette dangers as they their brains and lungs are developing.

- Nicotine stimulates the central nervous system and raises blood pressure, respiration, and heart rate. Adolescent exposure to nicotine is dangerous as it damages brain development, impulse control, and primes young brains for addiction.
- Individuals who smoke are 3x more likely to drink alcohol. Brain changes in young adults, because of nicotine, can lead to addiction with other dangerous drugs throughout adolescence and adulthood. A recent study revealed teenage cigarette smokers age 12 to 17 were 50x more likely to be daily marijuana users than teens who did not smoke.

New research studies highlight that youth using e-cigarettes have a high likelihood of transitioning to using combustible cigarettes.

- Flavored e-liquids remain the primary driver for why youth initiate or experiment with e-cigarettes or vaping. Mostly all e-liquid contains nicotine. The FDA does not regulate e-cigarettes and therefore the amount of nicotine in each of these products can vary and often contain more nicotine than traditional cigarettes.
- Youth exposure to e-cigarettes puts them at higher risk for exposure to nicotine which increases their chances of developing symptoms of nicotine dependence or addiction and often creates a strong possibility they will initiate tobacco use with other tobacco-related products that contain nicotine.

- Ultimately, evidence shows that youth often use e-cigarettes concurrently with other tobacco products, transitioning from experimentation to long-term nicotine addiction.
- Youth who dual use e-cigarettes with combustible cigarettes, or other tobacco products, are more likely to smoke more cigarettes than an adolescent who does not use both. Recent studies show that teens who smoked an e-cigarette in one month were 7x more likely to smoke a cigarette in the future.
- With 90% of all adult smokers starting before the age of 18, it is crucial to prevent these adolescents from converting from e-cigarette use to long-term cigarette use.

With over 7,000 flavors and technology-savvy advances, e-cigs are aggressively marketed to attract youth.

- Users can mix and match flavor combinations and often youth are attracted to the popular candy and sweet-flavored e-juice options; some flavors include fruit loops, cinnamon roll, bubble gum, cotton candy, gummy bear, and other names such as zombie apocalypse, snake bite, and vanilla marshmallow.
- Youth are exposed to a plethora of e-cigarette ads; companies increased e-cig advertising spending from \$6.4 million in 2011 to \$115 million in 2014. More than half of all high school students (about 8 million) saw e-cigarette ads in retail stores, and more than 6 million saw them on the internet.

As of November 22, 2017, e-cigarettes are now included in a provision in the New York State Clean Indoor Air Act.

- This provision prohibits e-cigarette use in environments and spaces where combustible cigarettes are banned. They are banned in restaurants, bars, and worksites, etc.
- They were also recently banned by Governor Cuomo on all New York State private and public school grounds. These steps have shed light on the dangers and public health epidemic that e-cigarettes have created in youth populations, especially in cohorts that reside in middle and high schools around Monroe County.

There is currently not enough data on these products at the moment to predict their detrimental long term effects on users, especially on young adults.

- Various studies pinpoint toxic containments found in the aerosol and nicotine levels are almost 4x the amount of that contained in cigarettes. The lack of long-term impacts is troublesome for public health advocates, researchers, scientists, doctors, and other health professionals.
- Some researchers recommend using e-cigarettes as a cessation tool, but many studies point to the inconsistencies of cigarette users ability quitting using this process; they often end up becoming long-term dual users of both combustible cigarettes and e-cigarettes because of the unregulated amount of nicotine contained in e-cigarettes. Ultimately “safer” alternatives do not mean safe.
- Tobacco control advocates promote evidence-based models to support cessation (i.e. using nicotine-replacement therapy or quit coaches) and acknowledge the dangers and harms associated with e-cigarettes.

There are numerous steps legislators, organizations, communities, school boards, and towns can take to address the local Monroe County e-cigarette public health epidemic.

- Municipalities can educate their town, village, or community about tobacco-free policies at parks, recreational areas, and public outdoor spaces where e-cigarette and tobacco use can be prohibited in areas where youth congregate and are more likely to use.
- The City of Rochester, Monroe County, and local municipalities can enact policies that create healthier and safer businesses, neighborhoods and corner stores that limit accessibility to e-cigarettes or tobacco products; particularly those stores that reside near schools and youth-centered locations. Preventing excessive signage, price discounts, and product location near child-friendly products and eye level displays are typical procedures many localities have pursued around the state and nation.
- Educate local legislators on Tobacco 21 (T 21) policies that raise the sale age of tobacco from 18 to 21. These policies reduce the accessibility of tobacco products, reduce youth initiation, and limit youth access these products through social circle and network distribution in schools. Tobacco 21 (T21) reduces the social acceptability of these products and helps deter e-cigarette purchases to youth under 21 years of age. Currently, 18 localities around New York State have enacted T21 laws which equate to 61% of the NYS population (12,085,094 residents),

Teachers, parents, and students can be involved by doing the following.

- Set a positive example by being tobacco-free. For free help, call 1-800-QUIT-NOW or visit www.smokefree.gov or nysmokefree.com
- Talk to youth about the dangers of e-cigarettes and why they shouldn't use any tobacco products. Provide them information and open discussions on e-cigarettes. <https://health.usnews.com/health-news/health-wellness/articles/2015/10/21/how-to-talk-to-your-teen-about-vaping>
- Schools and districts can involve themselves with a nationwide program called Catch My Breath, which allows middle and high schools to enroll in a prevention program specific to the use of e-cigarettes. The link <https://catchinfo.org/modules/e-cigarettes/> provides information on the program and to enroll go to <https://catchinfo.org/enroll/>

Additional resources include the following.

- 2016 Surgeon General's Report: E-Cigarette Use Among Youth and Young Adults
 - https://www.cdc.gov/tobacco/data_statistics/sgr/e-cigarettes/index.htm
- Surgeon General information information
 - <https://e-cigarettes.surgeongeneral.gov/>
- 2018 E-cigarette & Vaping Study
 - <https://www.nap.edu/catalog/24952/public-health-consequences-of-e-cigarettes>
- Vaping can be addicting:
 - <https://www.nytimes.com/2018/01/23/health/e-cigarettes-smoking-fda-tobacco.html>
- Vaping could lead to smoking:

- <https://www.sciencenews.org/article/using-high-nicotine-e-cigarettes-may-boost-vaping-and-smoking-teens?mode=topic&context=69>
- Nicotine and the teenage brain:
 - <https://www.sciencenewsforstudents.org/article/explainer-nico-teen-brain>

If you have any input, questions or concerns please contact us below,

Joseph Potter. Joseph.Potter@lung.org or (585) 484-1504
Reality Check Youth Manager (Smoking and Health Action Coalition)
1595 Elmwood Ave., Rochester, NY 14620