

## REPORT TO THE BOARDS OF HEALTH

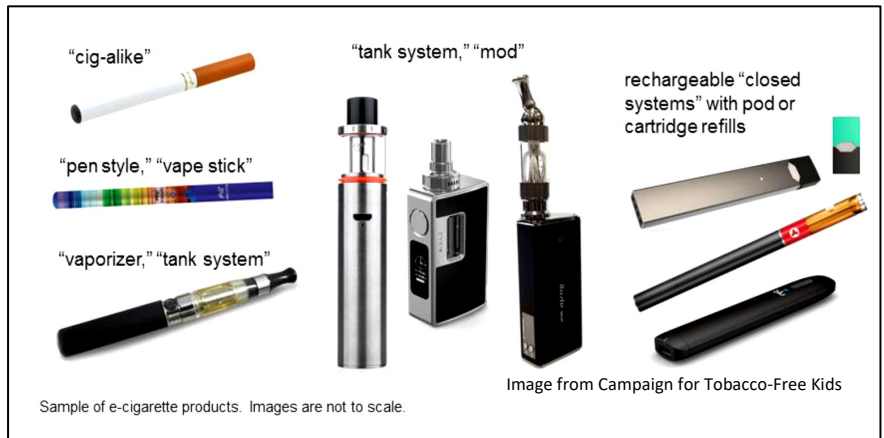
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Central Michigan District Health Department, Wednesday, April 24, 2019  
District Health Department #10, Friday, April 26, 2019



### E-cigarette Use or Vaping

E-cigarettes, also known as e-cigs, vapes, vape pens, and electronic nicotine delivery systems, are less harmful than cigarettes but are not harm-free. The aerosol or vapor from e-cigarettes contains nicotine, volatile organic compounds, ultrafine particles, cancer-causing chemicals, and heavy metals such as nickel, tin, and lead. There are many unanswered questions about the long-term safety of e-cigarettes, and it isn't known whether or not e-cigarettes help people quit smoking or discourage smokers from quitting completely.



E-cigarette use, or vaping, by youth has continued to increase. In December 2018, the Surgeon General declared e-cigarette use among youth an epidemic in the United States. Data from the Monitoring the Future survey, which evaluates teen substance use in the U.S., found the increases in adolescent vaping from 2017 to 2018 were the largest ever recorded in the history of the survey. On average in 2018, about one in five 12<sup>th</sup> graders in the U.S. (21%) vaped nicotine in the prior 30 days. This was an increase from 11% from 2017. E-cigarette use by youth exceeds all other tobacco products, including cigarettes. It has been found that use of e-cigarettes by youth increases the risk they will later use tobacco cigarettes by 3 to 4 times.

Tobacco and Nicotine Product Use By High School Students, 2018		
Activity	Michigan	United States
E-Cigarette Use	15%	21% (5% of Middle Schoolers use E-cigs)
Cigarette Use	11%	8%
Males Smoking Cigars	11%	9%

“E-juice” comes in thousands of different flavors and many are kid-friendly such as gummy bear, berry blend, chocolate, peach, cotton candy, strawberry and grape. 81% of kids that have tried e-cigarettes started with a flavored product and list the available flavors as a major reason for using the product. Many e-cigarette companies promote their products heavily on social media, reaching many youth and young adults. The Youth Tobacco Survey found that nearly 78% of middle and high school students were exposed to e-cigarette advertising in 2016. It has been found that greater exposure to e-cigarette advertising is associated with higher odds of use in youth.

E-juice with nicotine is not the only drug used in e-cigarettes. Vaping of marijuana by teens has also been increasing. From 2017 to 2018, the percent of 12th graders who vaped marijuana within 30 days of the Monitoring the Future survey increased from 4.9% to 7.5%. Similarly, in 10th graders, marijuana vaping significantly increased from 4.3% to 7.0%, and in 8th graders, marijuana vaping increased from 1.6% to 2.6%. Marijuana extracts, known as hash oil, wax, budder, shatter, BHO (butane hash oil), or THC E-liquid, can be used in e-cigarettes and typically have much higher TCH levels compared to marijuana. They often do not produce much of a smell when vaped and can be used more discretely (i.e., while at school) than other forms of smoked marijuana. It has been found that when marijuana products are vaped, there are significantly

greater drug effects, cognitive and psychomotor impairment, and higher blood THC concentrations than when the same doses of marijuana are smoked.



## Health Living Recommendations

1. Educate youth and their parents about the harms of e-cigarette and nicotine use.
2. Incorporate e-cigarettes into smoke-free policies and encourage local businesses and schools to do the same.
3. Help with efforts to prevent access of e-cigarettes to youth, such as regulating e-cigarettes like tobacco.

## Resources

- Model Ordinances/Policies for Smoke-free/vapor free workplaces, schools, etc. <https://no-smoke.org/materials-services/resource-library/#1518456190213-6d6ff6dc-8375>
- CDC Electronic Cigarettes [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/index.htm](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm)
- Tobacco Free Kids <https://www.tobaccofreekids.org/>
- Truth Initiative, e-cigarette page <https://truthinitiative.org/topics/tobacco-products/e-cigarettes>
- Surgeon General, e-cigarette page <https://e-cigarettes.surgeongeneral.gov/>
- Talk Sooner, e-cigarette page <http://www.talksooner.org/drugs/e-cigarettes>
- Stanford University Tobacco Prevention Toolkit Middle and High School E-cigarettes and Vape Pens program <https://med.stanford.edu/tobaccopreventiontoolkit/E-Cigs.html>
- Scholastic "E-Cigarettes: What You Need to Know" lesson <http://headsup.scholastic.com/teachers/lesson-e-cigarettes-what-you-need-to-know>

## References

- Centers for Disease Control and Prevention (CDC). About Electronic Cigarettes (E-Cigarettes) [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/about-e-cigarettes.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html)
- Campaign for Tobacco-Free Kids (2017). The Flavor Trap. <https://www.tobaccofreekids.org/microsites/flavortrap/#summary>
- Campaign for Tobacco-Free Kids. Electronic Cigarettes: An Overview of Key Issues. <https://www.tobaccofreekids.org/assets/factsheets/0379.pdf>
- Miech, R. A., Schulenberg, J. E., Johnston, L. D., Bachman, J. G., O'Malley, P. M., & Patrick, M. E. (December 17, 2018). "National Adolescent Drug Trends in 2018." Monitoring the Future: Ann Arbor, MI. Retrieved 4/15/19 from <http://www.monitoringthefuture.org>
- Sabet, K. (2019). Marijuana Policy. Smart Approaches to Marijuana. <https://learnaboutsam.org/wp-content/uploads/2019/03/Slides-PDF-2019-Feb.pdf>
- Spindle, T. R., Cone, E. J., Schlienz, N. J., Mitchell, J. M., Bigelow, G. E., Flegel, R., ... & Vandrey, R. (2019). Acute Pharmacokinetic Profile of Smoked and Vaporized Cannabis in Human Blood and Oral Fluid. *Journal of analytical toxicology*.
- Spindle, T. R., Cone, E. J., Schlienz, N. J., Mitchell, J. M., Bigelow, G. E., Flegel, R., ... & Vandrey, R. (2018). Acute effects of smoked and vaporized cannabis in healthy adults who infrequently use cannabis: a crossover trial. *JAMA network open*, 1(7), e184841-e184841.