



VAPE PREVENTION WEBINAR

Statewide Event

Ashley Yaugher, PhD; Christina Pay,
MSHE; Cris Meier, PhD; Jordyn Oman,
BS; Jenna Hawks; & Hailey Judd, MPH



Overview

E-cigarettes

- Effects
- Parental Involvement
 - Recognize signs of use
 - How to talk to your youth
 - House rules
- Resources





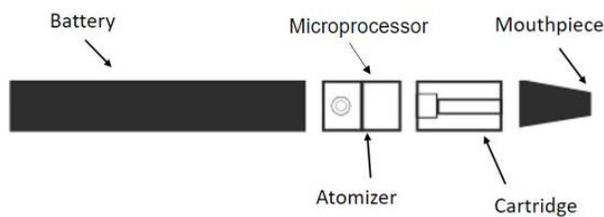
Spot the E-cigarettes



https://www.youtube.com/watch?v=fjDP8rTkiWw&feature=emb_logo

(TobaccoFree, CA., 2020)

Design of an E-cigarette



Battery

- Power
- Rechargeable

Atomizer

- Heats

Cartridge

- Storage
- Refillable/replaceable

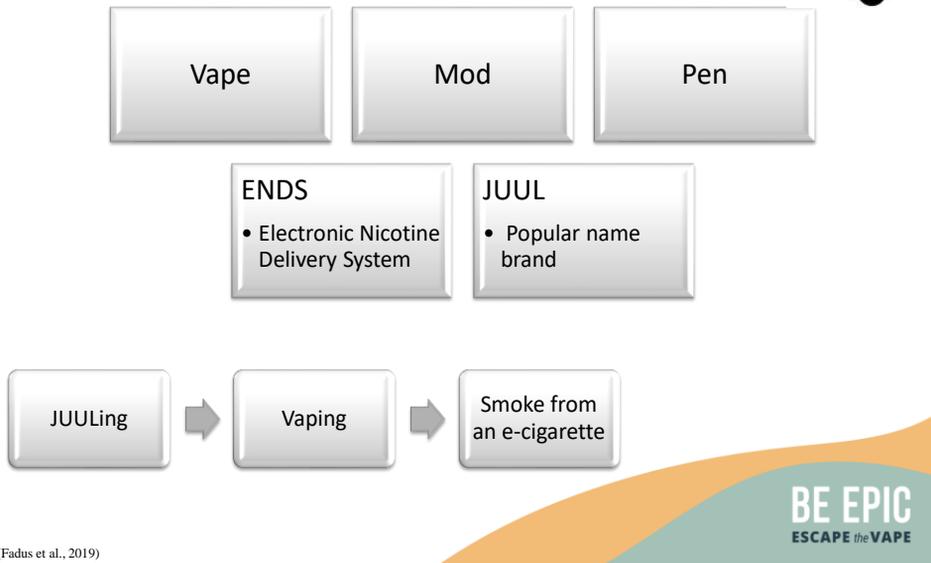
Microprocessor

- Activates atomizer

(CATCH, 2020)

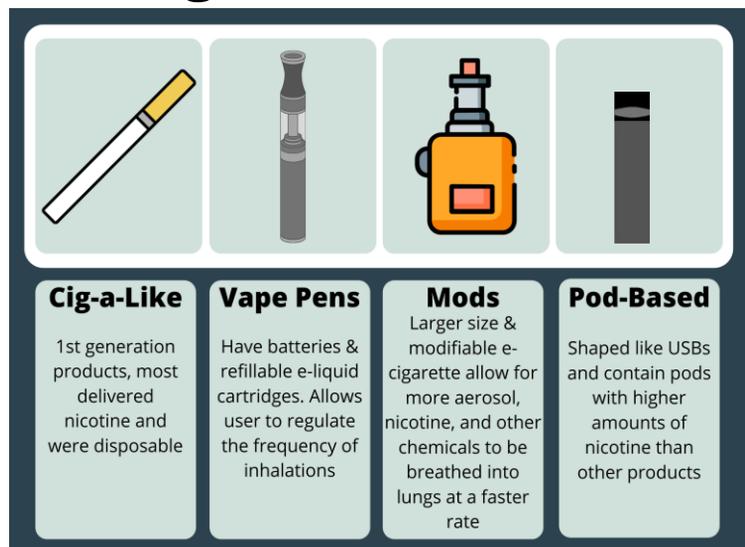
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E-cigarette Names



(Fadus et al., 2019)

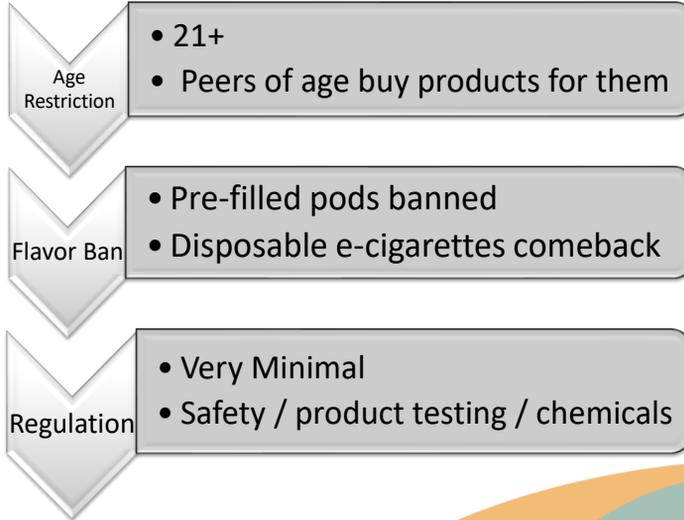
E-cigarette Generations



(Adapted from Stanford University, n.d.; CATCH, 2020)



FDA



(CATCH, 2020; Cobb et al., 2020; McKeganey et al., 2019; Sharpless et al., 2019; Graphics: Canva)

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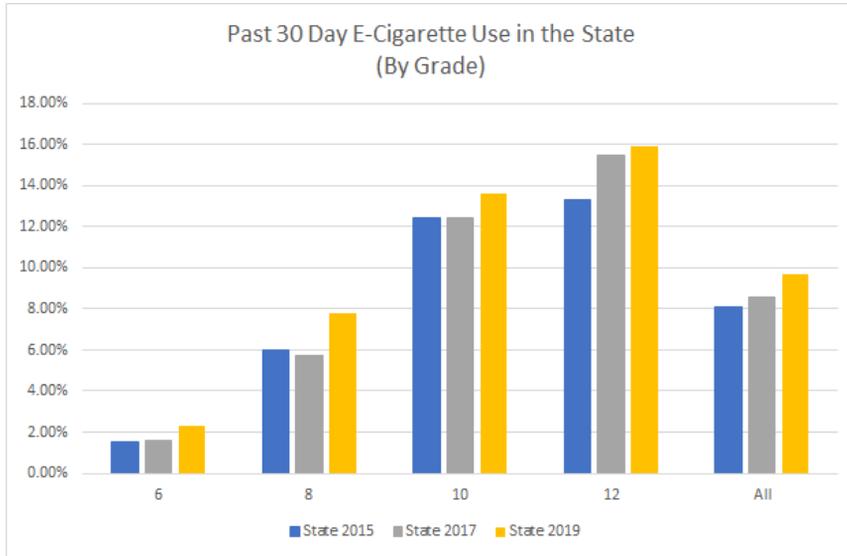


JUUL

(CATCH, 2020; Images Source: Pixabay)

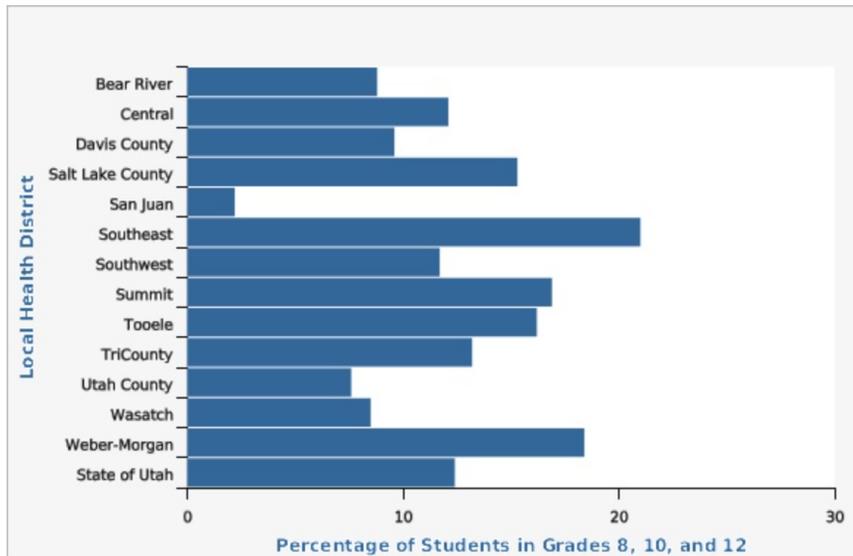
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Statewide - Past 30 Day Use



(Bach-Harrison, 2020; CDC, 2020; SHARP, 2019; Utah Department of Health, 2020)

Statewide - Past 30 Day Use



(Image Source: Utah Department of Health, 2020)

E-liquids

Name	Also found in	Effects on the body
Formaldehyde	Preservation of dead bodies (cadavers)	Eye, nose, & throat irritation. Carcinogen
Acetaldehyde	Disinfectant, drugs, perfumes	Irritates respiratory tract, fluid filled lungs, destroy lung tissue
Propylene Glycol	Antifreeze	Can cause lactic acidosis and seizures
Toluene	Nail polish, glue, paint fumes	Headaches & mental impairment

(CATCH, 2020; Goniewicz et al., 2014; Olmedo et al., 2018; Owusu et al., 2020; Popova et al., 2021; Rubinstein et al., 2018; Image Source: Depositphotos)

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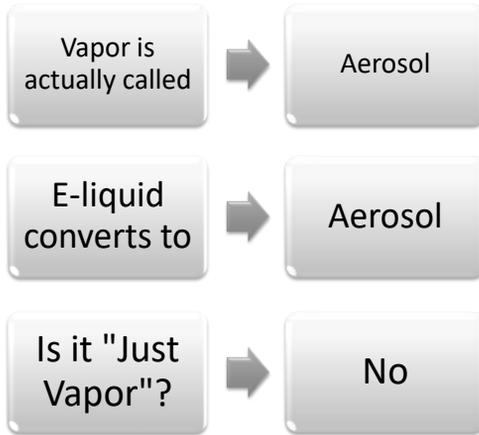
E-liquids Continued...



Name	Also found in	Effects on the body
N-Nitroxonornicotine	Preservation of meat	(Group 1 carcinogen)
Benzene	Rubbers, dyes, detergents	Leukemia & damages ovaries in women
Nickel, Lead, Cadmium		Damages lungs, kidneys, & brain. Are carcinogens
Nicotine	Insecticide	Discussed further on other slides
Diacetyl	Flavoring chemical	Asthma, Chronic Obstructive Pulmonary Disease (COPD), Popcorn Lung

(CATCH, 2020; Clapp et al., 2017; Goniewicz et al., 2014; Leventhal et al., 2020; Olmedo et al., 2018; Rubinstein et al., 2018; Vape Danger, n.d.)

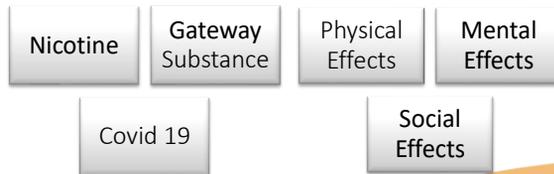
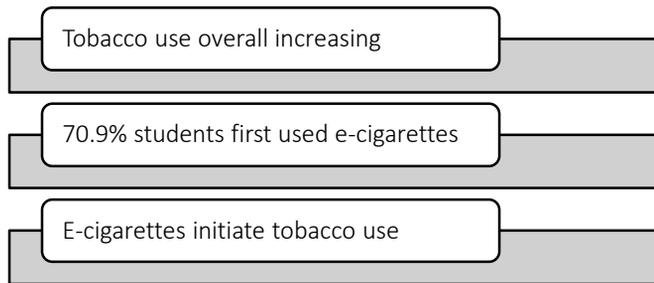
Is it "Just Vapor"?



(CATCH, 2020; Dictionary, n.d.; Image Source: depositphotos)

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Are E-cigarettes Safe?



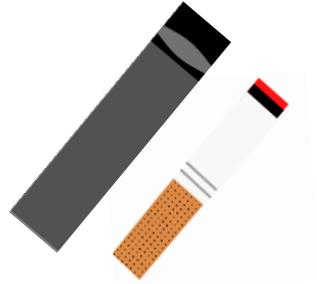
(Bach-Harrison, 2020; CDC, n.d.; CATCH, 2020; Image Source: depositphotos; Graphics: Canva)

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Nicotine



Nicotiana Tabacum plant



Products with nicotine



(Dani & Balfour, 2011; Fadus et al., 2019; FDA, n.d.; Hajek, et al., 2020; Marynak et al., 2017; Singh et al., 2020; Singh et al., 2020; Image Source: Pixabay ; Graphics: Canva)

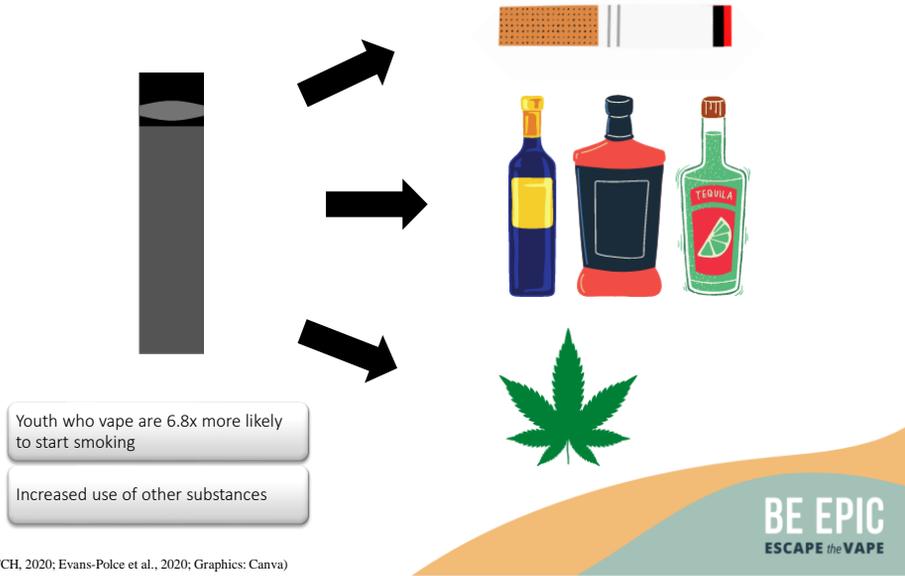
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Nicotine in E-cigarettes



(Adapted from Stanford University, n.d.)

Gateway Substance



(CATCH, 2020; Evans-Polce et al., 2020; Graphics: Canva)

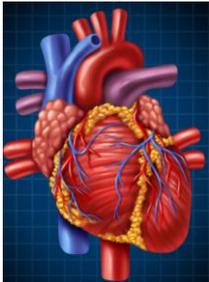
Physical Effects



Lung Illnesses

- Asthma
- Bronchitis
- COPD
- Popcorn Lung

EVALI (E-cigarette or Vaping use Associated Lung Injury)



Cardiovascular concern

- Increased heart rate and blood pressure
- Increased risk for heart attack

Daily vapors are 1.7x more likely to have a heart attack

Other

- Sores
- Dry mouth
- Nausea
- Vomiting
- General abdominal pain
- Headaches

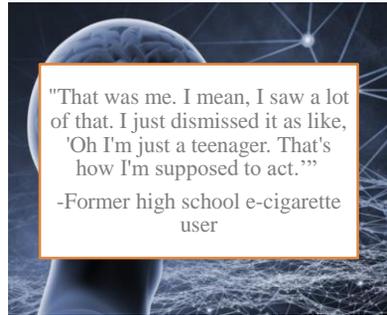
(Alzahrani et al., 2018; Blagev et al., 2019; Blount et al., 2020; CATCH, 2020; CDC, COPD, n.d., CDC, FastStats, n.d., Stalgaitis et al., 2020; Vape Danger, n.d.; Image Source: depositphotos)

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Mental Effects

Brain Development

- Age 25
- Synapse formation
- Higher Sensitivity
- Increased risk of dependence



Additional Effects

- Mood swings
- Impulse control
- Anxiety
- Memory & attention

(CATCH, 2020; Dwyer et al., 2019; Marynak, et al., 2017; Popova et al., 2021; Stalgaitis et al., 2020; Image Source: depositphotos)

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Social Effects

Withdrawn Loss of freedom Poor academia

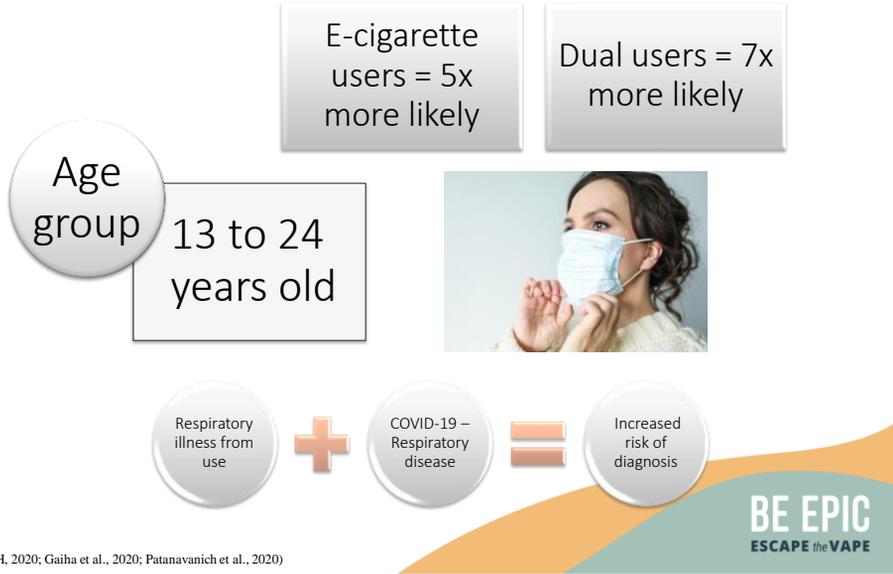
Athletic performance Disengagement



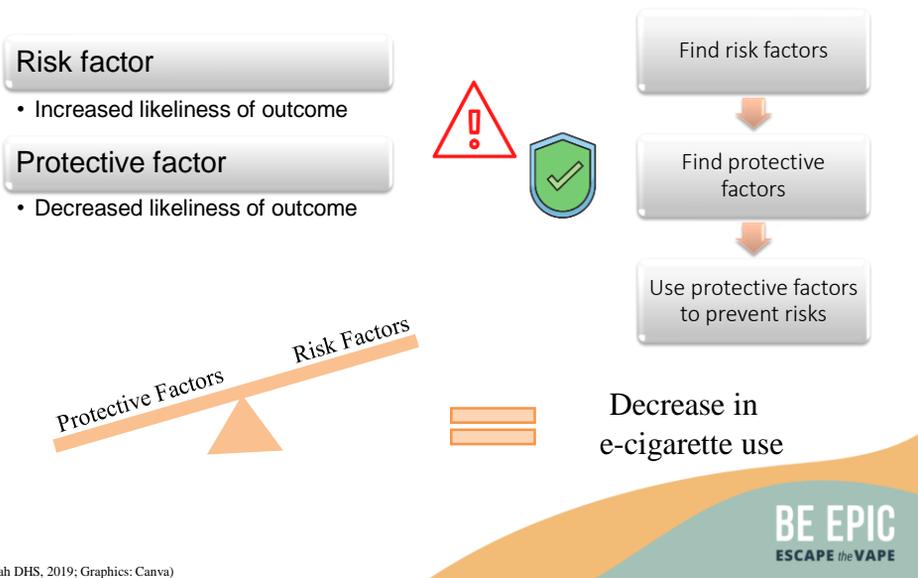
(CATCH, 2020; Popova et al., 2021; Image Source: pixabay ; Graphics: Canva)

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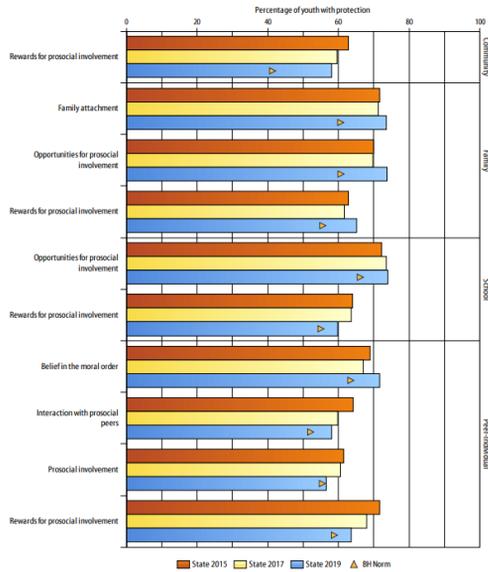
Vaping During a Pandemic



Protective and Risk Factors



Protective Factors



(Utah DHS, 2019)

Family Attachment

Prosocial Involvement

Belief in Moral Order



Family Attachment



When youth feel a part of their family, they are at a decreased risk of initiating e-cigarette use.



(Bach-Harrison, 2020; Utah DHS, 2019; Graphics: Canva)

- Movie Nights
- Cooking together
- Build something/Arts & Crafts
- Game Nights

93.2% students with family attachment did not vape

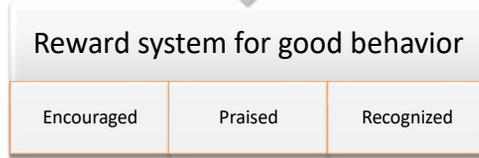


Prosocial Involvement



When youth have opportunities to be involved they are less likely to initiate e-cigarette use

(Utah DHS, 2019; Graphics: Canva)



92.5% students with peer-individual prosocial involvement did not vape

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Belief in Moral Order

Belief in "right" and "wrong"

Individuals who have a belief in moral order and who's peers also have that belief, are less likely to use e-cigarettes

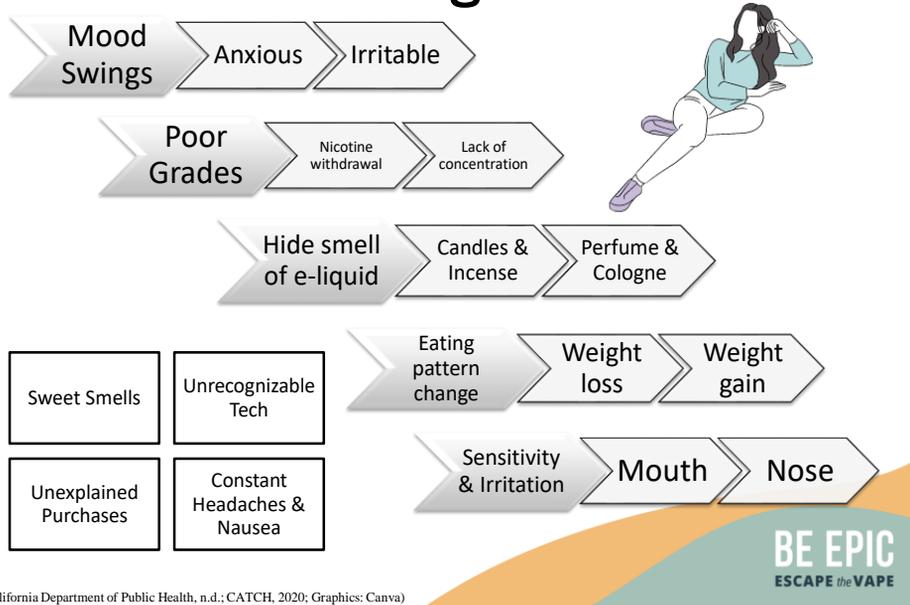
94.5% students with moral order did not vape



(Bach-Harrison, 2020; Utah DHS, 2019; Graphics: Canva)

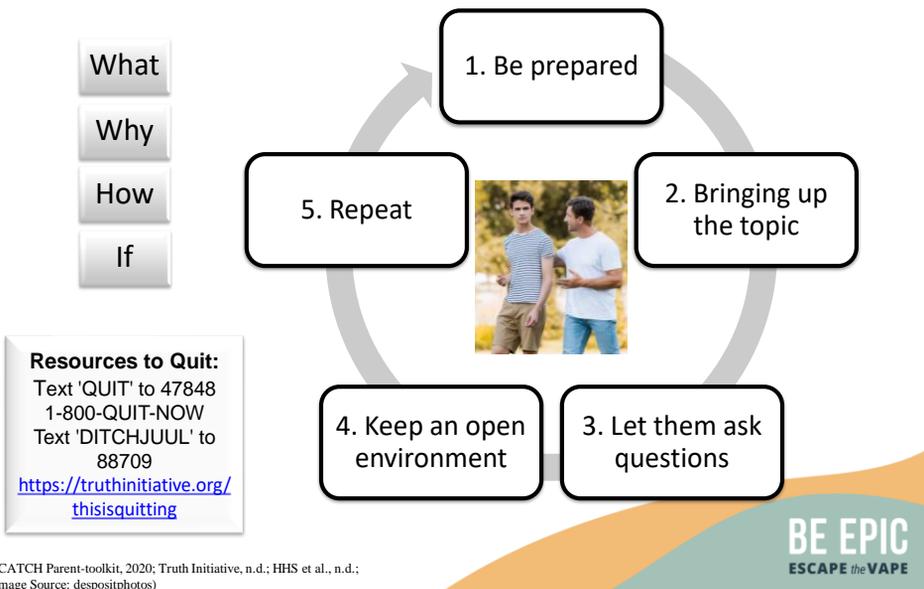
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Possible Signs of Use



(California Department of Public Health, n.d.; CATCH, 2020; Graphics: Canva)

How to Talk to Your Youth



(CATCH Parent-toolkit, 2020; Truth Initiative, n.d.; HHS et al., n.d.; Image Source: despositphotos)

Set Tobacco House Rules

Just talking to your youth about tobacco may not be enough

- Combo of conversation & house rules

Establish a tobacco-free hoome expectation

- Strict tobacco house rules decreases tobacco product use in youth (including e-cigarettes)

What to do if a parent or relative uses tobacco?

- Be honest
- Explain difficulties of path
- Still need to follow the household rules

(CATCH, 2020; Emoy et al., 2010; Harakeh et al., 2005; U.S. Department HHS, n.d.; Wu & Chaffee, 2020)

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Be Prepared for Excuses



"It's just water vapor"



"Studies have found harmful chemicals in e-liquids such as..."

"I just do it for fun. I can stop whenever"



"99.4% of e-liquids have nicotine in them, which is very habit forming"

"There are no effects from using"



"Studies are actually finding effects from use such as..."

(CATCH, 2020; Marynak, et al., 2017; Graphics: Canva)

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Parting Challenge



Set or plan a day
to talk to
your youth about
e-cigarettes

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Website and Contact Information

Jenna Hawks – Health & Wellness Prevention
Coordinator

- Grand County
- (435) 210-8077
- jenna.hawks@usu.edu



Jordyn Oman – Health & Wellness
Prevention Coordinator

- Carbon & Emery County
- (435) 650-0514
- Jordyn.oman@usu.edu



Be Epic, Escape the Vape
• <https://extension.usu.edu/be-epic/index>

Questions



Be Epic, Escape the Vape
• <https://extension.usu.edu/be-epic/index>



Special Thanks

Southeast Utah
Health Department
(SEUHD)



References

- Alzahrani, T., Pena, I., Temesgen, N., & Glantz, S. A. (2018). Association Between Electronic Cigarette Use and Myocardial Infarction. *American Journal Preventive Medicine*, 55(4): 455-461. <https://doi.org/10.1016/j.amepre.2018.05.004>
- Bhat, D., Chittoor, H., Muruges, P., Basavanna, P. N., & Doddaiiah, S. (2019). Estimation of occupational formaldehyde exposure in cadaver dissection laboratory and its implications. *Anat Cell Biol*, 2019; 52:419-425. <https://doi.org/10.5115/acb.19.105>
- Blagev, D. P., Harris, D., Dunn, A. C., Guidry, D. W., Grisson, C. K., & Lanspa, M. J. (2019). Clinical Presentation, Treatment, and Short-term Outcomes of Lung Injury Associated with E-cigarettes or Vaping: A Prospective Observation Cohort Study. *Lancet*, 394(10214), P2073-P2083. [https://doi.org/10.1016/S0140-6736\(19\)32679-0](https://doi.org/10.1016/S0140-6736(19)32679-0)
- Bach-Harrison. (2020). Utah Department of Human Services: Substance Abuse and Mental Health: Utah SHARP Web Tool. Retrieved December 11, 2020 from <http://www.bach-harrison.com/utahsharpwebtool/>
- Blount, B. C., Karwowski, M. P., Shields, P. G., Morel-Espinosa, M., Valentin-Blasini, L., Gardner, M., ... & Corstvet, J. (2020). Vitamin E Acetate in Bronchoalveolar-Lavage Fluid Associated with EVALI. *New England Journal of Medicine*, 382(8), 697-705. <https://doi.org/10.1056/NEJMoa1916433>
- California Department of Public Health. (n.d.). Parent resources.Flavors Hook Kids, Tobacco Free CA. Retrieved December 10, 2020 from <https://www.flavorshookkids.org/parent-resources/>
- CATCH. (2020). CATCH My Breath Vaping Prevention Program: State of the Union of the Youth Vaping Epidemic and Introduction to an Evidence-Based Prevention Program. Retrieved December 4, 2020 from <https://letsgo.catch.org>
- CDC, COPD. (n.d.). Chronic Obstructive Pulmonary Disease (COPD). *Centers for Disease Control and Prevention*. Retrieved December 20, 2020 from <https://www.cdc.gov/copd/index.html>
- CDC, FastStats. (n.d.). Leading Causes of Death. *Centers for Disease Control and Prevention*. Retrieved December 29, 2020 from <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>
- Cho, J. H. & Paik, S. Y. (2016). Association Between Electronic Cigarette Use and Asthma Among High School Students in South Korea. *PLoS One*, 11(3), e0151022. <https://doi.org/10.1371/journal.pone.0151022>

References

- Chun, L., Moazed, F., Calfee, C., Matthay, M., & Gots, J. (2017). Pulmonary Toxicity of E-cigarettes. *American Journal of Physiology*, 313(2), L193-L206. <https://doi.org/10.1152/ajplung.00071.2017>
- Clapp, P. W., Pawlak, E. A., Lackey, J. T., Keating, J. E., Reeber, S. L., Glish, G. L., & Jaspers, I. (2017). Flavored E-cigarette Liquids and Cinnamaldehyde Impair Respiratory Innate Immune Cell Function. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 313(2), L278-L292. <https://doi.org/10.1152/ajplung.00452.2016>
- Cobb, N. K., & Solanki, J. N. (2020). E-Cigarettes, Vaping Devices, and Acute Lung Injury. *Respiratory Care*, 65(5), 713-718. <https://doi.org/10.4187/respcare.07733>
- Dani, J.A., & Balfour, D. J. K. (2011). Historical and Current Perspective on Tobacco use and Nicotine Addiction. *Trends in Neurosciences*, 34(7), 383-392. <https://doi.org/10.1016/j.tins.2011.05.001>
- Dictionary.com. (n.d.). Retrieved December 28, 2020, from <https://www.dictionary.com/>
- Dwyer, J. B., McQuown, S. C., & Leslie, F. M. (2009). The Dynamic Effects of Nicotine on the Developing Brain. *Pharmacology & Therapeutics*, 122(2), 125-139. <https://doi.org/10.1016/j.pharmthera.2009.02.003>
- Emoy, K., Saquib, N., Gilpin, E. A., & Pierce, J. P. (2010). The Association Between Home Smoking Restrictions and Youth Smoking Behavior: A review. *Tobacco Control*, 19, 495-506. <http://dx.doi.org/10.1136/tc.2010.035998>
- Evans-Polce, R. J., Veliz, P., Boyd, C. J., & McCabe, S. E. (2020). Initiation Patterns and Trends of E-cigarette and Cigarette Use Among US Adolescents. *Journal of Adolescent Health*, 66(1), 27-33. <https://doi.org/10.1016/j.jadohealth.2019.07.002>
- Fadus, M. C., Smith, T. T., & Squeglia, L. M. (2019). The Rise of E-cigarettes, Pod Mod Devices, and JUUL Among Youth: Factors Influencing Use, Health Implications, and Downstream Effects. *Drug and Alcohol Dependence*, 201, 85-93. <https://doi.org/10.1016/j.drugalcdep.2019.04.011>
- FDA. (n.d.) *Nicotine: The Addictive Chemical in Tobacco Products*. US Food and Drug Administration. Retrieved December 29, 2020 from <https://www.fda.gov/tobacco-products/health-information/nicotine-addictive-chemical-tobacco-products>

References

- Gaiha, S. M., Cheng, J., & Halpern-Felsher, B. (2020). Association Between Youth Smoking, Electronic Cigarette Use, and COVID-19. *Journal of Adolescent Health, 67*(4), 519-523. <https://doi.org/10.1016/j.jadohealth.2020.07.002>
- Goniewicz, M. L., Knysak, J., Gawron, M., Kosmider, L., Sobczak, A., Kurek, J., Prokopowicz, A., Jablonska-Czapla, M., Rosik-Dulewska, C., Havel, C., & Jacob, P. (2014). Levels of Selected Carcinogens and Toxicants in Vapor from Electronic Cigarettes. *Tobacco Control, 23*(2), 133-139. <https://doi.org/10.1136/tobaccocontrol-2012-050859>
- Hajek, P., Pittaccio, K., Pesola, F., Smith, K. M., Phillips-Waller, A., & Przulj, D. (2020). Nicotine Delivery and Users' Reactions to Juul Compared with Cigarettes and Other E-cigarette Products. *Addiction, 115*(6), 1141-1148. <https://doi.org/10.1111/add.14936>
- Harakeh, Z., Scholite, R. H., de Vries, H., & Engels, R. C. (2005). Parental Rules and Communication: Their Association with Adolescent Smoking. *Addiction, 100*(6), 862-870. <https://doi.org/10.1111/j.1360-0443.2005.01067.x>
- Jensen, R. P., Luo, W., Pankow, J. F., Strongin, R. M., & Peyton, D. H. (2015). Hidden Formaldehyde in E-cigarette Aerosols. *New England Journal of Medicine, 372*(4), 392-394. <https://doi.org/10.1056/NEJMc1413069>
- Leventhal, A. M., Mason, T. B., Cwalina, S. N., Whitted, L., Anderson, M. K., & Callahan, C. E. (2020). Flavor and Nicotine Effects on E-cigarette Appeal in Young Adults: Moderation by Reason for Vaping. *American Journal of Health Behavior, 44*(5), 732-743. <https://doi.org/10.5993/AJHB.44.5.15>
- Marynak, K. L., Gammon, D. G., Rogers, T., Coats, E. M., Singh, T., & King, B. A. (2017). Sales of Nicotine Containing Electronic Cigarette Products: United States, 2015. *American Journal of Public Health, 107*(5), 702-705. <https://doi.org/10.2105/AJPH.2017.303660>
- McKeganey, N., Russell, C., Katsampouris, E., & Haseen, F. (2019). Sources of Youth Access to JUUL Vaping Products in the United States. *Addictive Behaviors Reports, 10*, 100232. <https://doi.org/10.1016/j.abrep.2019.100232>

References

- Olmedo, P., Goessler, W., Tanda, S., Grau-Perez, M., Jarmul, S., Aherrera, A., Chen, R., Hilpert, M., Cohen, J. E., Navas-Acien, A., & Rule, A. M. (2018). Metal Concentrations in E-cigarette Liquid and Aerosol Samples: The Contribution of Metallic Coils. *Environmental Health Perspectives, 126*(2), 027010. <https://doi.org/10.1289/EHP2175>
- Owusu, D., Lawley, R., Yang, B., Henderson, K., Bethea, B., LaRose, C., Stallworth, S., & Popova, L. (2020). "The lesser devil you don't know": A Qualitative Study of Smokers' Responses to Messages Communicating Comparative Risk of Electronic and Combustible Cigarettes. *Tobacco Control, 29*, 217-223. <http://dx.doi.org/10.1136/tobaccocontrol-2018-054883>
- Patanavanich, R., & Glantz, S. A. (2020). Smoking is Associated with COVID-19 Progression: A Meta-analysis. *Nicotine & Tobacco Research, 22*(10), 1175-1180. <https://doi.org/10.1093/ntr/ntaa082>
- Patel, M., Czaplicki, L., Perks, S. N., Cuccia, A. F., Liu, M., Hair, E. C., Schillo, B. A., & Vallone, D. M. (2019). Parents' Awareness and Perceptions of JUUL and Other E-cigarettes. *American Journal of Preventive Medicine, 57*(5), 695-699. <https://doi.org/10.1016/j.amepre.2019.06.012>
- Popova, L., Fairman, R. T., Akani, B., Dixon, K., & Weaver, S. R. (2021). "Don't do vape, bro!" A Qualitative Study of Youth's and Parents' Reactions to E-cigarette Prevention Advertisements. *Addictive Behaviors, 112*, 106565. <https://doi.org/10.1016/j.addbeh.2020.106565>
- Rubinstein, M. L., Delucchi, K., Benowitz, N. L., & Ramo, D. E. (2018). Adolescent Exposure to Toxic Volatile Organic Chemicals from E-cigarettes. *Pediatrics, 141*(4), e20173557. <https://doi.org/10.1542/peds.2017-3557>
- Sharpless, N. (2019, September). How FDA is Regulating E-Cigarettes. Retrieved December 04, 2020, from <https://www.fda.gov/news-events/fda-voices/how-fda-regulating-e-cigarettes>.
- Singh, S., Windle, S. B., Fillion, K. B., Thombs, B. D., O'Loughlin, J. L., Grad, R., & Eisenberg, M. J. (2020). E-cigarettes and Youth: Patterns of Use, Potential Harms, and Recommendations. *Preventive Medicine, 133*, 106009. <https://doi.org/10.1016/j.ypmed.2020.106009>
- Stalgaitis, C. A., Djakaria, M., & Jordan, J. W. (2020). The vaping teenager: Understanding the psychographics and interests of adolescent vape users to inform health communication campaigns. *Tobacco Use Insights, 13*, 1179173X20945695. <https://doi.org/10.1177/1179173X20945695>

References

- TobaccoFree CA. (2019, April 04). Identify which products teens are vaping. Retrieved December 18, 2020, from <https://www.youtube.com/watch?v=fjDP8rTktWw>
- Truth Initiative. (n.d.) *Quitting E-cigarettes*. EX. Retrieved from <https://www.becomeanex.org/quitting-e-cigarettes/>
- U.S. Department of Health and Human Services [HHS]. (2018). Surgeon General's Advisory on E-cigarette Use Among Youth. Retrieved from <https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf>
- US. Department of Health and Human Services [HHS], National Institutes of Health (NIH), National Cancer Institute, USA.org. (n.d.) *Quit Vaping*. Smokefree.org. Retrieved from <https://teen.smokefree.gov/quit-vaping>
- U.S. Department of Health and Human Services [HHS], Office of the U.S. Surgeon General, and the Centers for Disease Control and Prevention [CDC]. n.d. Know the Risks: E-cigarettes and Young People. Retrieved from <https://e-cigarettes.surgeongeneral.gov/takeaction.html>
- Utah Department of Health (2020, December 23). Complete Health Indicator Report of Electronic Cigarettes / Vape Products. Retrieved February 15, 2021, from https://ibis.health.utah.gov/ibisph-view/indicator/complete_profile/ECig.html
- Utah Department of Human Services Division of Substance Abuse and Mental Health [DHS]. (2019). Student Health and Risk Prevention [SHARP] Prevention Needs Assessment Survey: Results for State of Utah. Retrieved from <https://dsamh.utah.gov/pdf/sharp/2019/State%20of%20Utah%20Report.pdf>
- Vape Danger. (n.d.) *Vaping health risks*. Vape Danger. Retrieved December 7, 2020 from <https://www.vapedanger.com/health-risks/>
- Wu, T.S. & Chaffee, B.W. (2020). Parental awareness of Youth Tobacco Use and the Role of Household Tobacco Rules in Use Prevention. *Pediatrics*, 146(6), e20194034. <https://doi.org/10.1542/peds.2019-4034>
- Zosel, A., Egelhoff, E., & Heard, K. (2010). Severe lactic acidosis after an iatrogenic propylene glycol overdose. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 30(2), 219-219. <https://doi.org/10.1592/phco.30.2.219>

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