

Teens and Vaping: What's behind the smoke?



*Matthew Quinn, LCPC, CADC
Community Relations Coordinator
Rosecrance Health Network*

Monitoring the Future

- The University of Michigan has an ongoing research project called Monitoring the Future that has followed adolescent substance abuse trends since 1975.
- The project anonymously surveys 8th, 10th, and 12th grade students across the nation including annual follow-up surveys for a number of years after graduation.
- Each year over 45,000 students from approximately 400 schools across the county are surveyed.

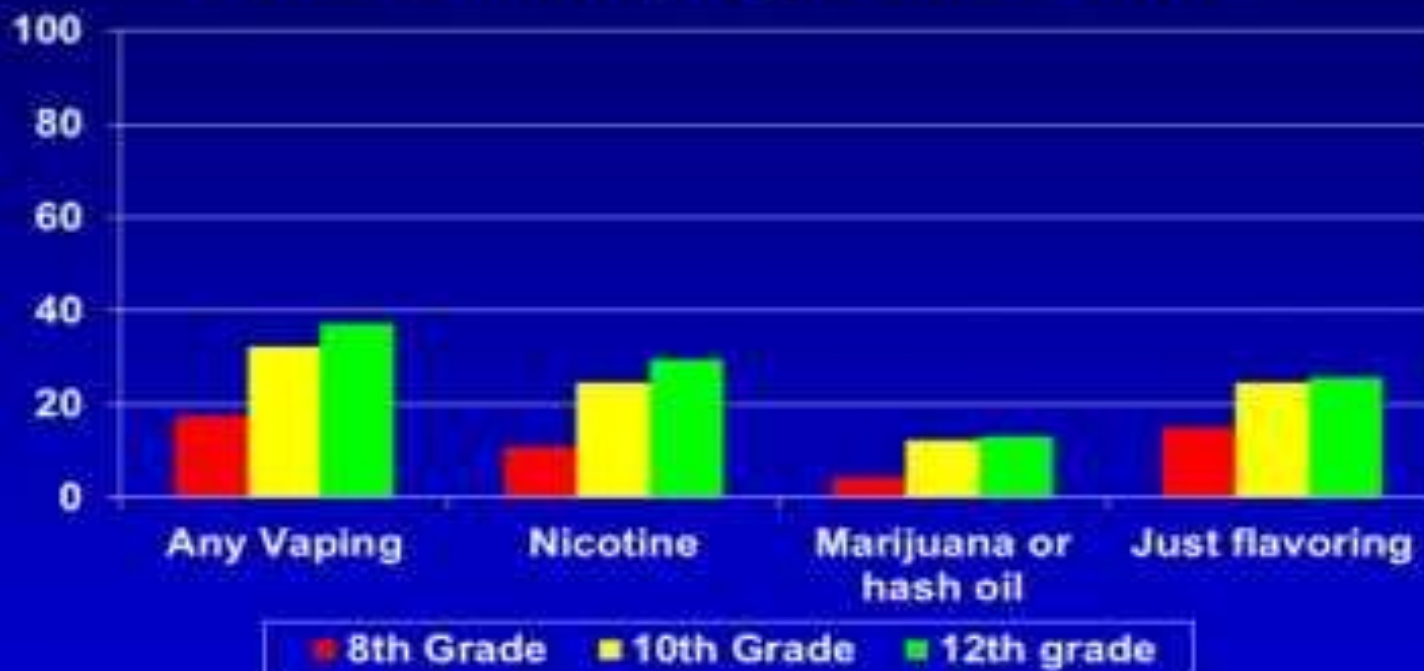
What is this research telling us?

- Increase in teen vaping from 2017 to 2018 was the largest in the history of the study by double (43 year old study)
- 12th graders vaping nicotine past 30 days nearly doubled (11% to 21%) (8% to 16% for 10th grade and 3.5% to 6% for 8th grade)
- Adding 1.3 million nicotine vapers from 2017-18 (9th-12th grade)

What else is this research telling us?

- Marijuana vaping past 30 day use also increased significantly from 2017-18 (4.5 to 7.9% for 12th, 4.3 to 7% for 10th, and 1.6 to 2.6 for 8th)
- Cigarette use among 8th and 10th grades did not decline (had been for two decades)
- Binge drinking and prescription opioid use actually declined (especially for 12th graders)

Percent of Students Reporting Vaping in Past Year, by Type and Grade



SOURCE: University of Michigan, 2018 Monitoring the Future Study

Vaping Statistics

E-Cigarette/Vaping	2016	2018
Students (all 10 th , 12 th graders surveyed) who have used nicotine e-cigarette /vaping product in the past 30 days	12%	26%
Students who have used vaping product in the past year	-	29%
Students who used e-cigarette for the first time ever in the past year	13%	24%

Source: Illinois Youth Survey 2018 (suburban Cook, DuPage Counties)

What is Vaping?

Term used to describe when a substance is heated to the point of releasing vapor (vaporizing) but not combusted (lit on fire)

- Inhaling and exhaling the aerosol, often referred to as vapor, which is produced by an e-cigarette or similar device
- Increasing in popularity as a way to ingest nicotine and cannabis
- Usually relatively odorless, and difficult to distinguish between nicotine and cannabis vape



What's in E-cigarettes/E-juice?

- The FDA has not evaluated any of the e-liquids currently on the market and does not regulate these products. FDA requires vape manufacturers to reveal ingredients in e-liquids, but not the harmful carcinogens in the heated vapor. FDA is considering significant restriction on flavors.
- *Ingredients in e-liquid (e-juice): Nicotine, flavoring, humectant (propylene glycol or vegetable glycerin)*
- *Once heated: Formaldehyde, Acetaldehyde, Acrolein, Particulates and Toxic Metals*



Common Chemicals in Vapes (42)

Acetaldehyde (paint stripper) **Formaldehyde**

Acetone

Isoprene (rubber)

Acrolein

Lead

Benzene (pest and gas)

Nickel

Cadmium (car batteries)

Propional

Chromium

Propylene Glycol (deicing)

Diacetyl (popcorn lung)

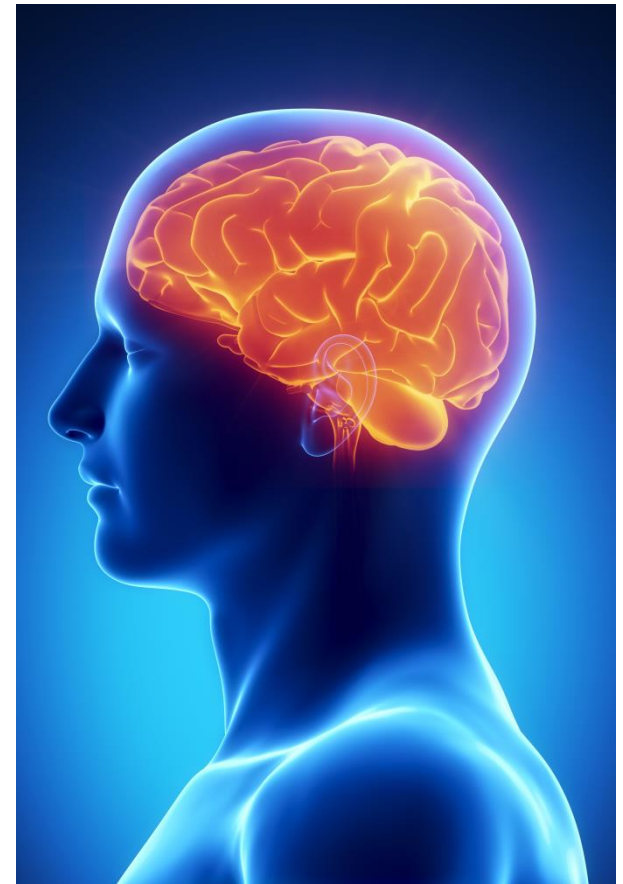
Tin

Diethylene Glycol (afreeze)

Toluene (poison industrial solvent)

Nicotine and the Teen Brain

- Rapid brain growth in key parts of the brain continues into the 20s
- Nicotine and marijuana use in adolescence interferes with natural brain development in some key areas
- Nicotine impairs development of the prefrontal cortex (area responsible for decision making, judgment, and planning)



Risk for Progression of Use

- Over 90% of adults with a severe substance use disorder began use under age 18.
- Children who begin using at or before age 13 have a 47% risk of developing a severe substance use disorder during their lifetime, age 17 run about 25%, age 21 run 10%

Types of Vaping Devices

- JUUL
- Suorin (Air/Drop)
- Phix
- Pen style, pod, and box mods



E-juice and Pods

- Currently 7,700 flavors of e-juice available
 - A bottle of e-juice contains enough nicotine to kill an adult
- Pods come in many flavors as well
 - Each pod is the equivalent of a pack of cigarettes



Mods

Modified e-cigarette or vape pen. Often refers to modification of the battery that powers the device.

- Stronger, longer lasting, and more consistent batteries increase the intensity of the vapor
- The mods can also involve the casing and atomizer (the part that creates the vapor).
- Vape on steroids



Dabs

Dabs is a highly concentrated butane hash oil (BHO) created in a process where high quality cannabis is blasted with butane and extracted

- A type of marijuana extract that is vaporized to get high (heated and inhaled)
- Contains 70-90% THC compared to 5-15% THC in regular cannabis
- Wax, oil, shatter/glass, crumble, budder



Tips for Parents

- **Have a curious (not accusatory or suspicious) conversation with you teen**
- **Ask open ended questions (What do you think of this whole vaping thing? Why do you think kids get into these things?)**
- **Set expectations toward the end of the conversation based on research/science (ie. Brain development, chemicals, risk for substance use disorder) and not moral judgment**
- **Set a good example (do you use alcohol? Is it responsible?)**

Sources

- <https://www.cdc.gov/media/releases/2018/p0607-youth-tobacco-use.html>
- https://e-cigarettes.surgeongeneral.gov/documents/2016_sgr_full_report_non-508.pdf
- <https://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/Manufacturing/ucm602792.htm#9>
- <https://www.hsph.harvard.edu/news/press-releases/e-cigarette-flavoring-chemicals-linked-to-respiratory-disease/>
- <http://newscenter.lbl.gov/2016/07/27/e-cigarettes-emit-harmful-chemicals-emit-others/>
- <https://phys.org/news/2017-04-quantitative-aldehyde-content-electronic-cigarettes.html>
- <https://www.sciencenewsforstudents.org/article/e-cigs-create-toxic-vapors-harmless-e-liquids>
- <https://www.thoracic.org/about/newsroom/press-releases/journal/e-cigarettes-may-trigger-unique-and-potentially-damaging-immune-responses.php>
- <https://www.webmd.com/smoking-cessation/news/20150218/e-cigarette-ingredients#1>
- <http://gaspforair.org/gasp/gedc/pdf/E-CigSmoke.pdf>



Rosecrance Naperville

2135 City Gate Lane #300
Naperville, IL 60563

Services offered:

- Free confidential drug and alcohol evaluations
- Early intervention services
- Assistance to families who need help finding resources
- Prevention resources and presentations for parents and students
- Substance abuse awareness training and education for professionals, community organizations and parents
- Urine drug screens offered at an additional cost

Rosecrance Des Plaines

Evidence-based substance abuse and mental health treatment for adults

Services provided:

- Assessments
- Partial Hospitalization Program (PHP)
- Medication-Assisted Treatment (MAT)
- Day Intensive Outpatient Program (IOP)
- Night Intensive Outpatient Program (NIOP)
- Continuing Care (CC)
- Individual mental health counseling



Rosecrance Des Plaines

701 Lee St. Suite 800
Des Plaines, IL 60016



The Rosecrance Griffin Williamson Campus is a 67,000 square foot, 80-bed treatment center for teens up to 20 years old.

The facility includes an on-site school, chapel, gymnasium, fitness center, healing garden and conservatory.

Specialized Programming for Teens with Mental Health Disorders



Rosecrance Griffin Williamson Campus

1601 University Drive
Rockford, IL 61107

We have expanded our program to include treatment for the following challenges facing teens as a **primary diagnosis**:

- Mood disorder
- Bi-polar disorder
- Major depression
- Anxiety disorder
- Post Traumatic Stress Disorder (PTSD)
- Victims of abuse
- Self-destructive behaviors
- Suicidal behaviors
- Poor impulse control

Clients will see a psychiatrist twice a week or as needed during treatment. Clinicians are master's prepared.

Specialized Programming for Teens with Mental Health Disorders



Rosecrance Griffin Williamson Campus

1601 University Drive
Rockford, IL 61107

General treatment modalities may include:

- Personal medication management
- Individual and family therapy
- Group therapy
- Recreational therapy.

Specialized groups will address:

- Depression
- Mood management
- Cognitive Behavior Therapy (CBT) skills
- Dialectical Behavior Therapy (DBT) skills
- Drug and alcohol prevention
- Life skills

Other activities include:

- Therapeutic drumming, art, horticulture, yoga, ropes course, fitness, team building, and soothing room and mindfulness practice.



rosecrance
life's waiting

815.391.1000

888.928.5278

www.rosecrance.org