Teens and Vaping: What’s behind the smoke?

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Rosecrance Health Network
What is the research telling us?

• From 2017 to 2018: Vaping has increased 78% among high school students (11.7% to 20.8%) and 48% among middle school students (3.3% to 4.9%)

• 1.5 million more students used e-cigarettes in 2018 compared to 2017

• In 2018, 3.6 million middle and high school students used e-cigarettes in the past 30 days, including 5% of middle school and 21% of high school students

• By the way, in 2017, only 2.8% of adults were current e-cigarette users

Source: [www.monitoringthefuture.org](http://www.monitoringthefuture.org) and [www.scholastic.com](http://www.scholastic.com)
TEENS USING VAPING DEVICES IN RECORD NUMBERS

PAST-YEAR VAPING

<table>
<thead>
<tr>
<th>Grade</th>
<th>8th graders</th>
<th>10th graders</th>
<th>12th graders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17.6%</td>
<td>32.3%</td>
<td>37.3%</td>
</tr>
</tbody>
</table>

WHAT DO TEENS SAY THEY ARE VAPING?

<table>
<thead>
<tr>
<th>Substance</th>
<th>8th graders</th>
<th>10th graders</th>
<th>12th graders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marijuana or Hash Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Just Flavoring</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: www.monitoringthefuture.org
## Vaping Statistics

<table>
<thead>
<tr>
<th>E-Cigarette/Vaping</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (all 10th &amp; 12th graders surveyed) who have used nicotine e-cigarette/vaping product in the past 30 days</td>
<td>12%</td>
<td>26%</td>
</tr>
<tr>
<td>Students who have used vaping product in the past year</td>
<td>-</td>
<td>29%</td>
</tr>
<tr>
<td>Students who used e-cigarette for the first time ever in the past year</td>
<td>13%</td>
<td>24%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>E-Cigarette/Vaping</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt; grade students who have used nicotine e-cigarette/vaping product in the past 30 days</td>
<td>22%</td>
<td>35%</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt; grade students who have used a tobacco/vaping product in the past year</td>
<td>-</td>
<td>15%</td>
</tr>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt; grade students who have used a tobacco/vaping product in the past year</td>
<td>-</td>
<td>39%</td>
</tr>
</tbody>
</table>

Source: Illinois Youth Survey 2018 (Will County)
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.

• *Ingredients in e-liquid (e-juice):* Nicotine, flavoring, humectant (*propylene glycol or vegetable glycerin*)

• *Once heated:* Formaldehyde, Acetaldehyde, Acrolein, Particulates and Toxic Metals
### Over 60 Chemicals in E-juice

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaldehyde</td>
<td><em>paint stripper</em></td>
</tr>
<tr>
<td>Acetone</td>
<td><em>nail polish remover</em></td>
</tr>
<tr>
<td>Acrolein</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td><em>pest and gas</em></td>
</tr>
<tr>
<td>Cadmium</td>
<td><em>car batteries</em></td>
</tr>
<tr>
<td>Chromium</td>
<td></td>
</tr>
<tr>
<td>Diacetyl</td>
<td><em>popcorn lung</em></td>
</tr>
<tr>
<td>Diethylene Glycol</td>
<td><em>antifreeze</em></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td></td>
</tr>
<tr>
<td>Isoprene</td>
<td><em>rubber</em></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
<td></td>
</tr>
<tr>
<td>Propional</td>
<td></td>
</tr>
<tr>
<td>Propylene Glycol</td>
<td><em>deicing</em></td>
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<td>Tin</td>
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</table>
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)

Source: http://www.jneurosci.org/content/34/16/5529.full
The Adolescent Brain

Adult Vs. Teen Brain

- Most of the activity in the adult brain is in the frontal lobe
  - Thinking, reasoning, planning

- Most of the activity in the teen brain is focused in the center
  - Pleasure reward center
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 and less than a half of a teaspoon can be fatal to a toddler
- Pods come in many flavors as well
  - Each pod is the equivalent of a pack of cigarettes
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
Cannabinoids

Effects

- Increased heart rate
- Bloodshot eyes
- Dry mouth
- Increased appetite
- Brain changes causing developmental delays
- Short-term memory loss
- Paranoia
- Aggression
- Psychosis
- Mood changes
Summary

• E-cigarettes and vapes are the most common tobacco product used by teens.
• Often leads to use of other tobacco products, or even marijuana.
• According to the CDC, nearly 9 out of 10 adult smokers began smoking before the age of 18.
• E-cigarettes and vapes are sold everywhere.
• Be aware, know what to look for, know the language, and educate others.
• For more info and teens who need help quitting: www.truthinitiative.org
Sources

- https://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/Manufacturing/ucm602792.htm#9
- https://www.webmd.com/smoking-cessation/news/20150218/e-cigarette-ingredents#1
Services offered:

- Free confidential drug and alcohol evaluations
- Early intervention services
- Adolescent Intensive Outpatient Program (IOP)
- Adult Intensive Outpatient Program
- 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 Frankfort
20635 Abbey Woods Ct N, Suite 310
Frankfort, IL 60423
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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.
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.

**Rosecrance Griffin Williamson Campus**
1601 University Drive
Rockford, IL 61107
Specialized Programming for Teens with Mental Health Disorders

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 Griffin Williamson Campus
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rosecrance
life’s waiting
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www.rosecrance.org