Teens and vaping: What’s behind the smoke?
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 and www.scholastic.com
Teens using vaping devices in record numbers

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>10th grade students who have used an e-cigarette/vaping product in the past 30 days</td>
<td>9%</td>
<td>18%</td>
</tr>
<tr>
<td>12th grade students who have used an e-cigarette/vaping product in the past 30 days</td>
<td>19%</td>
<td>29%</td>
</tr>
<tr>
<td>Students who used an e-cigarette for the first time ever in the past year</td>
<td>16%</td>
<td>21%</td>
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Source: Illinois Youth Survey 2018 *(Suburban Chicago Counties)*
# Vaping statistics

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<td>Students (all 10th &amp; 12th graders surveyed) who have used an e-cigarette/vaping product in the past 30 days</td>
<td>12%</td>
<td>26%</td>
</tr>
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<td>Students who have used an e-cigarette/vaping product in the past year</td>
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<td>24%</td>
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Source: Illinois Youth Survey 2018 ([Suburban Cook, DuPage Counties](https://www.illinois.gov))
## Vaping statistics

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<td>10&lt;sup&gt;th&lt;/sup&gt; grade students who have used an 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 any tobacco/vaping product in the past year</td>
<td>-</td>
<td>39%</td>
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Source: Illinois Youth Survey 2018 *(Will County)*
# Vaping statistics

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Source: Illinois Youth Survey 2018 *(Grundy 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

- Acetaldehyde (paint stripper)
- Acetone (nail polish remover)
- Acrolein
- Benzene (pest and gas)
- Cadmium (car batteries)
- Chromium
- Diacetyl (popcorn lung)
- Diethylene Glycol (antifreeze)
- Formaldehyde
- Isoprene (rubber)
- Lead
- Nickel
- Proponal
- Propylene Glycol (deicing)
- Tin
- Toluene (poison industrial solvent)
Popcorn lung is a serious lung disease linked to the chemical diacetyl that is used in some vaping liquids.
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
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 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
Vaping pot is more powerful than smoking it

- At the same level of THC, vaping leads to higher blood concentrations of the chemical than smoking, as well as higher levels of impairment.
- Vaping pot can cause hallucinations, vomiting and paranoia.
- Adolescents are more likely to vape marijuana than smoke it.

Source: NBC News
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-ingredients#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

20635 Abbey Woods Ct N, Suite 310
Frankfort, IL 60423
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

1601 University Drive
Rockford, IL 61107

Clients will see a psychiatrist twice a week or as needed during treatment. Clinicians are master’s prepared.
General treatment modalities may include:
• Personal medication management
• Individual, group, and family 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
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