Teens, Vaping and Substance Use

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Rosecrance
Director of Outreach
Even the very best school is a difficult place for a child.

Michael Thompson, Ph.D., The Pressured Child
Adolescent Development

• Physical Changes:
  • Changes in hormones.
  • Increases in height and weight.

• Mental Changes:
  • Developing more abstract thinking skills.
  • Using more logic and reason in decision making.
  • Forming own beliefs.
  • Questioning authority.
  • Heightened focus on physical concerns.

• Mental Health First Aid USA
Adolescent Development

• Emotional Changes:
  • Shifts mood quickly.
  • Feels more intensely.
  • Increases in risk-taking and impulsive behavior.

• Social Changes:
  • Experimentation with different levels of social and cultural identity.
  • Increase in peer influence.
  • Awareness of sexual identity.
  • Learns to manage relationships.
## Adolescent Development

<table>
<thead>
<tr>
<th>Typical Adolescence</th>
<th>Potential Warning Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawing from family to spend more time with friends</td>
<td>Withdrawing from friends, family and social activity</td>
</tr>
<tr>
<td>Wanting more privacy</td>
<td>Becoming secretive; need for privacy seems to be hiding something</td>
</tr>
<tr>
<td>Moving from childhood likes to teen pursuits</td>
<td>Losing interest in favorite activities and not replacing with other pursuits</td>
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</tbody>
</table>

Youth Mental Health First Aid USA
Factors that affect/change drug use trends

- Availability
- Perception of harm
- Cost
- Legalization
Availability

- The more readily available a drug is, the higher the risk it will be used.
Perception of harm

- Will this drug cause me harm?
- What are the perceived consequences of using a particular drug?
Cost

- Generally the lower the cost of a drug or the production of the drug the higher the trend to use
  - Vaping
  - Stolen prescription medication
  - Alcohol
  - Inhalants
  - Marijuana
  - Heroin
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.

Source: www.monitoringthefuture.org
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)

• 12\textsuperscript{th} graders vaping nicotine past 30 days nearly doubled (11% to 21%) 10\textsuperscript{th} graders (8% to 16% and for 8\textsuperscript{th} graders (3.5% to 6%)

• Adding 1.3 million nicotine vapers from 2017-18 (9\textsuperscript{th}-12\textsuperscript{th} grade)

Source: www.monitoringthefuture.org
What else is this research telling us?

• Marijuana vaping past 30 day use also increased significantly from 2017-18:
  • 12th grade (4.5% to 7.9%; 10th grade (4.3% to 7%); and 8th grade (1.6% to 2.6%)
  • 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)

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 10&lt;sup&gt;th&lt;/sup&gt;, 12&lt;sup&gt;th&lt;/sup&gt; 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)
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*
Common Chemicals in Vapes (42)

- Acetaldehyde (paint stripper)
- Acetone (nail polish remover)
- Acrolein
- Benzene (pest and gas)
- Cadmium (car batteries)
- Chromium
- Diacetyl (popcorn lung)
- Diethylene Glycol (antifreeze)
- Diethylene Glycol (antifreeze)
- Formaldehyde
- Isoprene (rubber)
- Lead
- Nickel
- Propional
- Propylene Glycol (deicing)
- Tin
- Toluene (poison industrial solvent)
Chemicals in E-liquids
Popcorn Lung

Popcorn lung is a serious lung disease linked to the chemical diacetyl that is used in some vaping liquids.
Vaping 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
- Drugs 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
Juul (pronounced jewel)

Specific vaping product from Pax Labs similar to an e-cigarette used to ingest nicotine ($50)

- Liquid contains nicotine salts extracted from the tobacco leaf (2x nicotine of previous e-cigs)
- Variety of flavors
  - Cool mint
  - Mango
  - Crème Brule
Suorin Air/Drop

Another common vaping product from Goldreams Technology in China ($20-$35)

• Comes with refillable nicotine cartridge
• Size of a credit card
• Looks like battery
• E-liquids in flavors
Phix

Another common vaping product from ECS Global ($35)

• Slightly stronger battery than Juul
• Strawberry
• Spearmint
• Mango
• Butterscotch
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
Cannabinoids

Marijuana is the most widely available and used illegal drug in the U.S.
Dabs

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

• 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
Edibles

- Increasingly popular alternative to smoking marijuana
- Produced to infuse marijuana into various ingestible forms
- Problem is that effects are hard to predict and difficult to know dose
- “Couch lock” or “couching”
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
Cannabinoids

Effects

- Impaired coordination
- Impaired judgment
- Chronic cough
- Lung damage
- Increased risk of heart disease and cancer
- Impaired motor skills

Symptoms of stimulant, depressant, and hallucinogen. Dependent on person using and its potency or being cut with other substances.
Cannabinoids

How High?

• ‘High’ lasts 2-3 hours, up to 6 hours in some studies
• THC percentage higher
• Impairment can last up to 24 hours
• Effect on driving- delayed reaction (DUI drug)
Other Terms for Cannabis

- Bud
- Dank
- Nug
- Loud
- Fire
- Gas
- “Let’s Match”
Marijuana is a concern for teens

- Professor Lloyd Johnston (Monitoring the Future Study - principal investigator) said.

- He notes that the percent of students who see regular marijuana use as carrying a great risk of harm has declined substantially since about 2005, and is still declining.

- "Perceived risk is usually a deterrent to use and it is clear that this deterrent has weakened considerably," Johnston said.

Source: www.monitoringthefuture.org
Teens and Marijuana: Dr Wright

https://www.youtube.com/watch?v=t0B0LIPk0nk
Alcohol
In 2018, 43% percent of Illinois seniors reported having attended or hosted a party at which alcohol was served with parent’s knowledge or consent.

Illinois Youth Survey, 2018
# County/State/National Last Year Alcohol Use

<table>
<thead>
<tr>
<th>Grade</th>
<th>Cook County Suburban</th>
<th>Winnebago County</th>
<th>Illinois</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th</td>
<td>22%</td>
<td>27%</td>
<td>23%</td>
<td>18%</td>
</tr>
<tr>
<td>10th</td>
<td>42%</td>
<td>46%</td>
<td>42%</td>
<td>38%</td>
</tr>
<tr>
<td>12th</td>
<td>63%</td>
<td>66%</td>
<td>58%</td>
<td>56%</td>
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Illinois Youth Survey 2018
What is Binge Drinking?

Any occasion where four (for women) and five (for men) or more drinks are consumed at one sitting is considered binge drinking, and it often raises the blood alcohol level very quickly.
Alcohol and Injury

• Athletes who drink alcohol at least once per week have an elevated risk of injury as compared to athletes who do not drink.
• Consuming alcohol regularly depresses immune functioning and slows the healing process for sports-related injuries.

www.uhs.uga.edu/aod/athletic-performance
Alcohol and the Athlete’s Next Day’s Performance

- Alcohol drinks consumed in one night can stay in the body and affect brain and body activities for up to three days.
- Two consecutive nights of drinking can affect the body for up to five days. Some research has shown up to 14 days.

http://www.nmnathletics.com/attachments1/503.htm?DB_OEM_ID=5800
Vaping Alcohol

- Alcohol is heated and then vapor is inhaled
- Effects more potent
- Risk for overdose
- Bypasses liver
Prescription drugs

More teens abuse prescription drugs than any illicit drug except marijuana.

https://www.youtube.com/watch?v=6SegZs4tURL
The Spectrum of Prescription Drug Abuse From Improper Use to Abuse

- Taking someone else’s prescription to self-medicate
- Taking a prescription in a way other than prescribed
- Taking a medication to get high
Teens and Young Adults mistakenly believe:

- It’s safer to abuse Rx drugs than illicit drugs, even if they’re not prescribed by a doctor.
- Rx drugs have fewer side effects and are not as addictive.
- It’s okay to share these drugs.

Other Factors Driving Trend: Ignorance/Invincibility
How Prescription Drugs Affect the Brain

• Taken as intended, prescription drugs safely treat mental or physical symptoms. When taken in different quantities or when symptoms aren’t present, they may affect the brain in ways similar to illicit drugs.
How Prescription Drugs Affect the Brain

• When abused, prescription drugs cause an increase in the amount of dopamine in the brain’s reward pathway. Repeatedly seeking to experience that feeling can lead to addiction.
Bars (Ladders)

Another name for the rectangular shaped Xanax (*anti-anxiety medication*) with three lines in them (*typically 2mg per ‘bar’*).

- The term “barred out” means being highly sedated due to Xanax consumption.
- School bus (yellow ‘bar’)
- Hulks, green monsters (green)
Prescription opiates

Common types
- Vicodin
- OxyContin
- Fentanyl
- Percocet
- Tylenol with codeine

Routes of admission
- Injected
- Taken orally
- Snorted
- Smoked
Hiding Places

- Writing Utensils
- Personal Hygiene Items
- Cars
- Toilets and Vents
- Altoid Tins
- Posters
- Books
- Clothes
Hiding Places

- Soda Cans
- Hair brush
- "Axe" bottle
- Candles
- Wall Safe
- Chap stick
Hiding Places

- Bottle opener
- Surge protector
- Flip flops
The younger you are when you start drinking or doing drugs, the more likely you are to develop a problem.
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; 25% who begin use at age 17, 10% who begin use at age 21

Source: http://www.casacolumbia.org/addiction-research/reports/adolescent-substance-use
Adolescents struggling with anxiety and depression will often self-medicate with drugs and alcohol.
“People without a firm sense of identity are vulnerable to mental illness.”

Michael Thompson, Ph.D.
Watch for Emerging Mental Health Issues

• ‘I can’t handle the pressure of school/sports/family life (anxiety)’
• ‘I don’t like myself/feel comfortable in my own skin (depression)’
• ‘I can’t take the memory of what happened/is happening (abuse/trauma)’
• ‘I can’t focus in school (ADHD)’
Risk Factors for SUD

- Genetics
- Age of First Use
- Mental Health Issues
- Environment
- Other Factors
Don’t Use!

- You can’t become addicted to substances if you don’t use them!
- 90% of Americans who become addicted to alcohol or other substances started before age 18
Healthy Sober Activities

- Limits boredom
- Creates feelings of support
- Exercise-related activities help to manage anxiety and depression
Managing Feelings/Seek Help

- Alcohol/drugs as a form avoidance
- Talk to someone!
- Work with professional to develop skills to manage unpleasant emotions
- Write (journal, lyrics, poems, stories)
Non-using Friends

• Being around drugs/alcohol is biggest trigger to use
• ‘I’m not giving up my friends who use!’
• Situational friends
• Friends as a mirror
HOW DO FAMILIES COPE
Family

“Addiction is a family disease that stresses the family to the breaking point, impacts the stability of the home, the family's unity, mental health, physical health, finances, and overall family dynamics.”
Most people who engage in harmful substance use do not fully recognize that they have a problem or that their life problems are related to their use of alcohol or drugs.
Common Mistakes

Minimizing the problem:

- All teens drink
- It’s only marijuana
- They have anxiety or depression

- Not understanding the full scope of a teen’s substance use OR not monitoring a potential concern can delay interventions that can prevent the problem from getting worse.
Common Mistakes

Denying the problem exists:

- Denial is a defense mechanism.
- Become susceptible to emotional manipulations
- Trust your gut – if it doesn’t sound right or feel right, it probably isn’t.
Common Mistakes

Rescuing them from consequences:

- Consequences are a powerful motivator.
- Short term relief doesn’t change long term solutions.
- People learn from their mistakes... Don’t take away these lessons.
End Result: Enabling

- Allowing and even encouraging irresponsible and self-destructive behavior in another by shielding them from the consequences of their actions
- “Helping that hurts”
- Can be parents, spouses, friends, teachers, employers, or co-workers – anyone with an emotional connection
Let’s talk about Emotional Enabling

• True recovery happens when:
  • The addict “does the uncomfortable things in life.”
  • Family members and others become aware of their part in the process.
  • Emotional hijacking of family members with these 4 Feelings.
Why don’t families intervene sooner?

- The addict manipulates the family by hijacking the emotions
  - Guilt
  - Sympathy
  - Fear
  - Hope

Recovery (change) is uncomfortable, the addict wants easy.
Common Mistakes: Emotional Manipulation

**Guilt:** “You’re too busy with your own life! You drink all the time! I hate you! You’re the reason I use!”

- Guilt is a strong emotion for parents that prevents change – the feeling that “I am a bad parent” and “I am the reason for my child’s problems.” Co-dependency

- Parents become unwilling to “punish” their child for behaviors they feel responsible for.

- The substance use isn’t really their fault.
Common Mistakes: Emotional Manipulation

Hope: “I promise I’ll never use again. I’ve learned my lesson.”

- You want to believe these statements, and you hope the problem will go away on its own, but when left untreated, substance use issues tend to get worse.

- Parents are often desperate for hope and fall prey to these emotions.

- Education about the process of addiction is the best antidote.
Common Mistakes: Emotional Manipulation

**Fear:** “I’ll run away! You’ll never see me again!” or “I’ll throw a temper tantrum to get you to back off!” “I’ll hurt myself”

- You may be afraid of making things worse by addressing the substance use, but avoidance is not the answer.
- Failing to respond allows the problem to continue and sometimes get worse.
- Clear, calm communication about the facts and the next steps is best antidote.
Common Mistakes: Emotional Manipulation

**Sympathy:** “My life sucks! I’m bored! I need drugs for my anxiety/depression/pain!”

- Used to minimize or eliminate the concern and get others to back off.

- Mental Health or Life’s circumstances are used as the reason for using drugs to alleviate physical or emotional pain and then it’s not their fault for using.

- Parents may find themselves backing off, telling them they care for child and what a good person they are.
Intervention
What You Can Do

- **Educate yourself about addiction.**
  What does addiction look like for teens? What’s normal behavior and what’s not?

- **Don’t go it alone.**
  Involve key people and build support and opportunity for intervention with others.

- **An intervention is not a one time event.**
  “Getting past no!” is a process. Continue to monitor with concern.
What You Can Do

- **Act quickly when the time is right!** Use a crisis to expedite treatment or action.

- **“Think outside the box.”** Remove barriers as they are presented.

- **Don’t underestimate the power of consequences and boundaries.** Fewer boundaries for teens today. Make the connection between behavior and consequences.

- **Limit teens access to drugs and alcohol.** Educate others about limiting teen’s access to alcohol, marijuana, RX drugs, and others.
What You Can Do

- **Provide parental support**
  
  Teens often have less parental involvement and supervision.

  Validate, be an ally with parents, connect parents with support like Rosecrance Parent Café or Al-Anon or Families Anonymous.

- **Enlist help from Addiction Professionals.**

  Assessments and consultations are helpful tools.

- **Help is available and Recovery happens!**

  Be aware that getting help might take time, energy and commitment.
What You Can Do

- **Rosecrance Can Help.** Our goal is to remove barriers.

  Location of assessment, Virtual tour or actual tour of facilities, School issues, Insurance issues, working with parents and engaging them to understand the need for treatment, etc.

- **Help de-stigmatize the need for help for those with Substance Use Disorders.**
“I'm not telling you it is going to be easy, I'm telling you it's going to be worth it.”

Anonymous
Sources

- https://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/Manufacturing/ucm602792.htm#9
- https://www.webmd.com/smoking-cessation/news/20150218/e-cigarette-ingredients#1
Adult Services:
• Free Assessments
• Individual/Family Counseling
• Intensive Outpatient Program
• Day Treatment
• Recovery Home

Teen & Adult Services:
• Free Assessments
• Early Intervention Services
• Intensive Outpatient Program
• Urine drug screens offered at an additional cost
• Resources and trainings for parents, professionals and community members
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.
Services offered:

- Free confidential drug and alcohol evaluations
- Residential substance abuse and primary mental health treatment for youth ages 12-20
  - Gender specific counseling
  - Experiential therapies including art, music, recreation, and horticulture
  - Family education and support
  - Transition planning
  - Alumni program

- Recovery homes for teens also offered in Rockford.
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.
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.
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