Electronic cigarettes

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Decrease in Cigarette Use in the US

E-cigarette Use on the Rise in Teens and Young Adults

Electronic cigarettes
- E-cigarette (e-cig)
- E-hookahs
- E-cigars
- Vape sticks
- Vape pens
- Vaping devices
- Electronic Nicotine Delivery System (ENDS)

E-cigarette Components

- E-liquid or e-juice
  - Propylene glycol
  - Vegetable glycerin
  - Nicotine
  - Flavoring
- Vaporizing chamber
- Power source/Battery

E-cigarette Devices

- First generation – “cig-alike”
- Second generation – “vape pens”
- Third generation – “mods”
- Fourth generation - JUUL

Is it Safe to Vape?

- E-cig aerosol generally contain fewer toxic chemicals vs traditional smoking
- E-cigs contain nicotine and other harmful chemicals
  - Carcinogens
  - Volatile organic compounds
  - Diacetyl in flavoring – “popcorn lung”
- Propylene glycol and glycerin in many food products
  - Safety has not been established for aerosolizing or inhaling them

Is it Safe to Vape?

- Nicotine use during pregnancy can affect fetal development
- Nicotine exposure in adolescence can become an addiction
  - Younger the exposure, stronger the influence
  - Impulse control problems
  - Disruptive behaviors
  - Early engagement with other substances
Is it Safe to Vape?

- E-liquids are often custom-mixed at home or vape shops
  - 1000s of unique flavoring
  - Marijuana-related products
- No safety regulations
- Some evidence e-cigarette aerosol toxicity
  - Direct toxicity to lung tissue
  - Impair host defense
  - Interfere normal lung development
- Unknown long-term effects

E-cigarette or vaping associated lung injury (EVALI)

EVALI Symptoms

<table>
<thead>
<tr>
<th>Constitutional:</th>
<th>Respiratory:</th>
<th>GI:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fever</td>
<td>- Cough</td>
<td>- Abdominal Pain</td>
</tr>
<tr>
<td>- Chills</td>
<td>- Shortness of Breath</td>
<td>- Nausea/vomiting</td>
</tr>
<tr>
<td>- Weight Loss</td>
<td>- Chest Pain</td>
<td>- Diarrhea</td>
</tr>
</tbody>
</table>

Clinical Evaluation

- Inquire about symptoms
- Thorough vaping history
  - Substance used
  - Brand
  - Frequency
  - Time of last use
  - Method of use
- Physical Exam
- Laboratory Testing:
  - CBC with diff
  - Inflammatory markers
  - Urine or serum toxicology screen
  - Rule out infection
- CXR or CT chest
- Consider bronchoscopy
<table>
<thead>
<tr>
<th>Management/Treatment</th>
<th>Quit Smoking Using E-cigs?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supportive care</td>
<td>• Currently not approved by FDA as a smoking aid</td>
</tr>
<tr>
<td>• +/- Corticosteroids</td>
<td>• Mixed studies</td>
</tr>
<tr>
<td>• Antibiotics</td>
<td>- Some evidence e-cigs with nicotine can help smokers long-term compared to placebo</td>
</tr>
<tr>
<td></td>
<td>- Most adult users do not stop smoking and continue to use both</td>
</tr>
<tr>
<td></td>
<td>- Among quitters, majority were still vaping</td>
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</tbody>
</table>

### E-cigarette Friend or Foe plus Quit Tips

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### Case Report

• Rebecca is a 56 year old female who has a 40 py history of smoking.  
• Quit using regular cigarettes 6 years ago using e-cigarette  
• Has continued to use the e-cigarette since quitting.  
• She is worried if she quits “vaping”, she will return to smoking regular cigarettes  
• Has she gained anything by her switch?
Who is using E-cigarettes?

- Middle school students
- High School Students
- Adults
  - Current regular cigarette smokers
  - Former smokers
  - Never regular smokers

Source: Fair Expert

Risks of E-cigarettes for Kids, Teenagers, and Young Adults?

- Most e-cigarettes contain nicotine.
- Can contain other harmful substances besides nicotine.
- Young people who use e-cigarettes may be more likely to smoke cigarettes in the future
- Increase risk for future addiction to other drugs.


Dangers of e-cigarettes

- Can deliver high levels of nicotine – highly addictive
- Health danger to pregnant women and their developing fetuses
- Ingestion has poisoned children and adults
- Difficult for consumers to know what e-cigarette products contain
- Long-term effects on health are still being studied


Are E-cigarettes less harmful than regular cigarettes? Yes, but...

Benefits
- Lower exposure to carcinogens
- Second hand smoke exposure
- May help smokers to quit smoking.

Concerns
- No evidence of safety of long term use
- No convincing evidence of efficacy as aid to quitting over approved methods
- Inconsistent levels of nicotine aerosol delivery and nicotine blood levels
- Impurities in solutions
E-cigarette as quitting aid?
- Currently insufficient evidence to make recommendation
- Not approved by the FDA
- Use of currently FDA approved methods have a proven track record of success
- Safety concerns
- Most e-cigarette users don’t stop but become “dual” users.

RECOMMENDATIONS FOR E-CIGARETTE USAGE?

CDC Public Health Recommendations
Do not:
- Use an e-cigarette, or vaping product that contains THC
- Buy any type of e-cigarette, or vaping products, particularly those containing THC, from informal sources (such as family, friends, or in-person or online dealers)
- Modify or add any substances to e-cigarette, or vaping, products that are not recommended by the manufacturer

AAFP Pharmacologic Product Guide of FDA-Approved Medications for Smoking Cessation
RECOMMENDATIONS FOR HELPING SMOKERS QUIT

The 5 A's of Treating Tobacco Use


FTND
- How soon after you wake up do you smoke your first cigarette?
  - After 60 minutes (0), 31-60 minutes (1), 6-30 minutes (2), Within 5 minutes (3)
- Do you find it difficult to refrain from smoking in places where it is forbidden?
  - No (0) Yes (1)
- Which cigarette would you hate most to give up?
  - The first in the AM (1) Any other (0)

FTND
- How many cigarettes per day do you smoke?
  - 10 or less (0), 11-20 (1), 21-30 (2), 31 or more (3)
- Do you smoke more frequently during the first hours after awakening than during the rest of the day?
  - No (0) Yes (1)
- Do you smoke even if you are so ill that you are in bed most of the day?
  - No (0) Yes (1)
Readiness to Quit Ladder

Circle the one number that shows what you think about quitting. Please read each sentence carefully before deciding.

• 10 I have quit smoking.
• 9 I have quit smoking, but I still worry about slipping back, so I need to keep working on living smoke free.
• 8 I still smoke, but I have begun to change, like cutting back on the number of cigarettes I smoke. I am ready to set a quit date.
• 7 I definitely plan to quit smoking in the next 30 days.
• 6 I definitely plan to quit smoking in the next 6 months.
• 5 I often think about quitting smoking, but I have no plans to quit.

Readiness to Quit Ladder

Circle the one number that shows what you think about quitting. Please read each sentence carefully before deciding.

• 4 I sometimes think about quitting smoking, but I have no plans to quit.
• 3 I rarely think about quitting smoking, and I have no plans to quit.
• 2 I never think about quitting smoking, and I have no plans to quit.
• 1 I have decided not to quit smoking for my lifetime. I have no interest in quitting.

Stages of change

Process of Nicotine addiction

• Chemical
• Medications
• Psychological
  • Develop new coping mechanisms
• Habit or conditioned behavior
  • New habit
Triggers and Action Plan

<table>
<thead>
<tr>
<th>Trigger Strength (0-4)</th>
<th>When do I smoke</th>
<th>What is my routine</th>
<th>New strategies for dealing with each trigger</th>
</tr>
</thead>
</table>
| 3                     | During Breakfast | Wake up, drink coffee, smoke | 1. Switch to drinking tea.  
2. Eat in different room.  
3. Water flowers |

Self Monitoring Log

Quit Plan

- Set a quit date
- Start daily medication 1-2 weeks before your quit date
- Start as needed medication on your quit date
- Cut back on a regular basis
  - Eq. cut out 2 cigarettes per week.
  - Use as needed medication to help you cut back
  - Start daily medication 1-2 weeks before you are scheduled to be quit. (if needed)

Managing Cravings

- Avoid triggers
- Get support
- List reasons for quitting
- Stay busy
- Smoke Free Zone.
- Use approved medications.
- Take it one day at a time.
Supporting your Quitter

- Emphasize positive outcomes of stopping tobacco, not on just the costs of continued use.
- Do not nag or criticize
- If you are a smoker, do not smoke around them
- Get rid of items that could be a trigger, lighters, ash trays or spit cups.
- Make your home and car a “smoke free” zone.

Has Rebecca gained anything by switching?

What's the bottom line?

- E-cigarettes have the potential to benefit adult smokers who are not pregnant if used as a complete substitute for regular cigarettes and other smoked tobacco products.
- E-cigarettes are not safe for youth, young adults, pregnant women, or adults who do not currently use tobacco products.
- While e-cigarettes have the potential to benefit some people and harm others, scientists still have a lot to learn about whether e-cigarettes are effective for quitting smoking.
- If you’ve never smoked or used other tobacco products or e-cigarettes, don’t start.
- Additional research can help understand long-term health effects.

"Source: CDC"; "Materials developed by CDC"