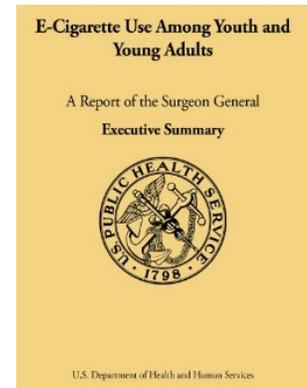


# Understanding the 2016 Surgeon General’s Report on Youth and Electronic Cigarettes: What Clinicians Need to Know

In December 2016, US Surgeon General Vivek Murthy, MD MBA released a report about youth and electronic cigarettes (e-cigarettes). The AAP Julius B. Richmond Center of Excellence has created this fact sheet to help pediatric clinicians interpret the findings of the Surgeon General’s Report and incorporate the information into patient care.



## Key Findings

After a comprehensive review of current literature, the report made the following conclusions:

1. The landscape of e-cigarettes and other electronic nicotine delivery systems is diverse, and these products are known by many different names.
2. E-cigarette use among youth and young adults is a public health concern, and has increased significantly in recent years.
3. E-cigarettes are the most commonly-used tobacco product among youth, and use of e-cigarettes is associated with use of traditional cigarettes and other tobacco products.
4. E-cigarettes and other products containing nicotine pose a danger for youth, pregnant women and fetuses. Youth use of nicotine, including in e-cigarettes, is unsafe.
5. Secondhand exposure to e-cigarette aerosol is not harmless; it contains nicotine and other harmful constituents. The nicotine contained in aerosol can cause addiction and have neurotoxic effects on the adolescent brain.
6. E-cigarettes are advertised and marketed to youth using the same tactics the tobacco industry has used to promote cigarette smoking in the past.
7. Evidence-based tobacco control interventions should be used to protect youth from e-cigarette use and exposure.

## Recommendations for Patient Care

**Screen:** Ask about tobacco use, including use of e-cigarettes, as a part of routine clinical screening with every patient and family.

**Ask the Right Questions:** Because e-cigarettes are known by many different names, it’s important to use a specific e-cigarette screening question.

One example is: *“Do you use any kind of tobacco, such as cigarettes? What about electronic smoking devices like e-cigarettes or vape pens?”*

**Talk with Teens Honestly:** Counsel about the harms of e-cigarette use, and stress the importance of avoiding these products. Explain that e-cigarettes contain nicotine and cancer-causing chemicals; they are not “just water vapor.” Discuss the effects of e-cigarettes on brain function, and explain that nicotine addiction happens quickly, and that users have an increased risk of using other tobacco products, including cigarettes.

When counseling, choose messages that resonate with adolescents: consider talking about the expense of e-cigarettes, or the loss of freedom that occurs when you're addicted to nicotine. Talk with them about the tobacco industry's efforts to target them with misinformation and advertising.

For both users and non-users, mention the dangers of secondhand e-cigarette exposure, and advise teens to avoid secondhand e-cigarette aerosol, and to discourage others from using e-cigarettes around them. For teens who babysit or have young siblings, explain that e-liquid is poisonous and can be fatal if ingested. Ensure that e-liquid is kept in childproof containers, and out of the reach of children.

Some suggestions for starting the conversation include:

- *"Can you tell me what you know about e-cigarettes?"*
- *"I know there's a lot of confusion out there about e-cigarettes, but I'd like to tell you what I know for sure."*

**Use Evidence-Based Interventions:** Although e-cigarettes are relatively new to the market, there are many evidence-based tobacco interventions that can be applied to e-cigarette use. Consider adapting the US Public Health Service's "5As" Tobacco Cessation Intervention to guide your conversation with parents and with youth:

- **ASK** about e-cigarette use
- **ADVISE** against e-cigarette use and about avoiding secondhand vapor exposure
- **ASSESS** whether teen is ready to quit using e-cigarettes
- **ASSIST** them in quitting, by setting a quit date and giving them practical advice for a successful quit attempt and for prevention of secondhand exposure by non-users
- **ARRANGE** follow-up to check on the teen's progress with quitting

## Related Resources

For the full text of the Surgeon General's Report, visit [www.surgeongeneral.gov](http://www.surgeongeneral.gov); for related resources, visit [E-cigarettes.Surgeongeneral.gov](http://E-cigarettes.Surgeongeneral.gov).

For more information about electronic cigarettes, including statistics and citations, visit: <http://www2.aap.org/richmondcenter/ENDS.html>

Visit the AAP Julius B. Richmond Center of Excellence online at: [www.richmondcenter.org](http://www.richmondcenter.org)

## Electronic nicotine delivery systems (ENDS)

### What physicians should know about ENDS

- Electronic nicotine delivery systems (ENDS), also called electronic cigarettes, e-cigarettes, vaping devices, or vape pens, are battery-powered devices used to smoke or “vape” a flavored solution.
- ENDS solution often contains nicotine, an addictive chemical also found in cigarettes.
- ENDS use is popular—the rate of adults trying an e-cigarette at least once more than doubled from 2010 to 2013,<sup>1</sup> and more youth are current users of e-cigarettes than combustible cigarettes.<sup>2</sup>
- In 2016, the Food and Drug Administration (FDA) expanded its regulatory authority to include the manufacture, import, packaging, labeling, advertising, promotion, sale, and distribution of all tobacco products, including ENDS. Under this new law, often called the "Deeming Rule," the FDA:
  - Requires health warnings on ENDS and other tobacco products.
  - Prohibits the sales of ENDS to youth under the age of 18.
  - Bans free samples and prohibits the sale of ENDS in vending machines.
  - Requires that ENDS manufacturers receive marketing authorization from the FDA.
  - Requires vape shops that mix e-liquids to comply with legal requirements for tobacco manufacturers.
- Exhaled ENDS vapor is not harmless water vapor—it has been shown to contain chemicals that cause cancer,<sup>3</sup> can cause harm to unborn babies,<sup>4</sup> and is a source of indoor air pollution.<sup>5</sup> ENDS are promoted as a way to smoke where smoking is prohibited. However, state and local officials are incorporating ENDS use into existing smoke-free air regulations to protect health.
- Some people use ENDS as a way to quit smoking combustible cigarettes, but current evidence is insufficient to recommend ENDS for tobacco cessation in adults,<sup>6</sup> and some people use both devices due to the addictive nature of nicotine.

### ENDS are a health hazard

- ENDS companies can legally promote these products by using techniques that cigarette companies have not been able to use since the 1998 Master Settlement Agreement, including television and radio ads, billboards, outdoor signage, and sponsorships.
- ENDS and ENDS solutions are available in many flavors (bubble gum, chocolate, peppermint, etc.) that appeal to youth. Flavors, design, and marketing renormalize and glamorize smoking.
- In 2016, the Child Nicotine Poisoning Prevention Act was signed into law. This law requires packaging safety standards for ENDS and the containers that hold ENDS solution. Under this law, liquid nicotine must be packaged in child-proof packaging, in accordance with Consumer Product Safety Commission standards. This law is an important step to protect children’s health. Prior to the passage of this act, poison control centers in the United States reported skyrocketing adverse exposures from e-cigarettes and liquid nicotine since 2011.<sup>7</sup>

## What physicians should tell patients and families about ENDS

- ENDS emissions are not harmless water vapor. Both the user and those around them are exposed to chemicals, some of which cause cancer.
- There is insufficient evidence to suggest ENDS are less harmful to a fetus than traditional cigarettes. Women who are pregnant or trying to become pregnant should be informed about the risks that ENDS pose for both maternal and neonatal health.
- The U.S. Preventive Services Task Force concludes that the current evidence is insufficient to recommend ENDS for smoking cessation.<sup>6</sup> Patients may ask about ENDS because they are interested in quitting smoking. Be ready to counsel as appropriate.
- Ask the right questions: “Do you smoke?” is a less effective way to get patients talking. Also ask patients, “Do you vape or use electronic cigarettes?”
- Recommend FDA-approved cessation products and refer patients to the state quitline (1-800-QUIT NOW), a text-based program (text QUIT to 47848), or an in-person cessation program.
- Insurance covers some medications and programs, and grants may be available to offer free cessation help. Do not let cost be a barrier to quitting.
- In 2016, the U.S. Surgeon General released a report,<sup>8</sup> which concluded that youth use of ENDS products is a public health concern. The report found that:
  - Youth use of e-cigarettes is associated with the use of other tobacco products.
  - Youth use of nicotine in any form, including ENDS, is unsafe.
  - Secondhand exposure to ENDS aerosol contains nicotine and other harmful constituents.

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# JUULing: What Pediatricians and Families Need to Know

## What is a JUUL?

JUUL (pronounced “jewel”) is a brand of e-cigarette made by JUUL Labs Inc.

JUUL has grown quickly in popularity since introduction to the market in 2015, fueled by a serious following among youth and young adults.

JUUL’s popularity among youth raises significant concerns for pediatric health.



## JUUL Characteristics:

JUUL is a sleek, small e-cigarette that resembles a flash drive. Unlike other types of e-cigarettes, JUUL does not look like a traditional cigarette and thus may not be immediately identifiable as a vaping device. Due to their size, JUUL devices are discrete and can be easily concealed in a fist or a pocket.

JUUL operates by heating a “pod” of e-liquid containing nicotine, flavorings and other substances. When heated, the e-liquid creates an aerosol which is inhaled by the user.

JUUL has spawned its own terminology: use of these devices is called “juuling.”

## Public Health Concerns:

**JUUL comes in youth-friendly flavors**, including mango, mint and fruit-medley. For decades, the tobacco industry has used flavors to attract youth to their products.<sup>1</sup> Youth cite flavors as a common reason for e-cigarette use.<sup>2</sup>

**JUUL is highly addictive.** The concentration of nicotine in JUUL is more than double the concentration found in other e-cigarettes. This high concentration is a serious concern for youth, who are already uniquely susceptible to nicotine addiction. The addictive potential is so high that the US Surgeon General has declared that youth use of nicotine in any form is unsafe.<sup>3</sup>

**JUUL users have a significant risk of becoming cigarette smokers.** Youth who use e-cigarettes are more likely to progress to smoking traditional cigarettes.<sup>3,4</sup>

**JUULing is increasingly common in high school and college campuses.** Educators report that youth are using JUUL in classrooms, hallways and restrooms, and are sharing devices with their peers. This social use encourages non-users to try JUUL, and enables students who are too young to purchase these products, or who could not otherwise afford them, to access them through peers.

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