

# Electronic Nicotine Delivery Systems (ENDS)

## What are Electronic Nicotine Delivery Systems (ENDS)?

Electronic Nicotine Delivery Systems (ENDS), also called e-cigarettes, personal vaporizers, vape pens, e-cigars, e-hookahs, or vaping devices are battery-powered devices that vaporize a liquid solution to produce an aerosol. ENDS typically contain nicotine, flavoring, and other chemicals. The “smoke” released from an e-cigarette is not water vapor but rather an aerosol that contains nicotine, toxins and other pollutants.<sup>1</sup> Using an e-cigarette is commonly called vaping and specialty e-cigarette shops are referred to as vape shops.

## Health and Safety

The full health and safety impact of ENDS is not fully known due to a lack of research and regulation. Nonetheless, ENDS solution contains nicotine and other chemicals such as anti-freeze, diethylene glycol, and carcinogens like nitrosamines<sup>1</sup>.

**Secondhand exposure to ENDS aerosol may also cause negative health effects due to the nicotine, ultrafine particles, and toxins that are released into the air.<sup>1</sup>**

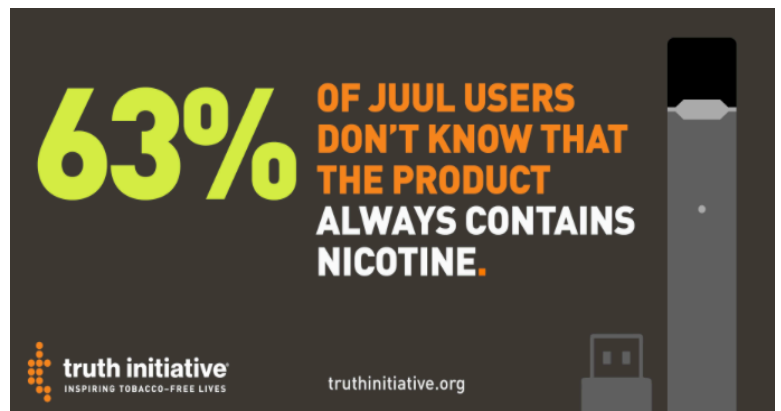
A recent study found that nicotine levels in non-smokers exposed to e-cigarette aerosol were similar to the nicotine levels in those exposed to conventional cigarette smoke.<sup>2</sup>



Certain types of ENDS, such as e-cigarettes, are commonly marketed as a safer alternative to smoking and a tool to help people quit smoking but this has not been proven. Although e-cigarettes may help some smokers quit, others transfer their cigarette addiction to e-cigarettes or use both.<sup>3</sup>

New ENDS products are coming on the market at a rapid pace. Since 2016, the e-cigarette brand JUUL has surged in popularity among young people and as of April 2018 has taken more than half of the e-cigarette market share.

**A new Truth Initiative study published in *Tobacco Control* reveals that while many young people are aware of JUUL, there is low awareness that the product always contains the addictive chemical nicotine.**<sup>4</sup>



**63%** OF JUUL USERS DON'T KNOW THAT THE PRODUCT ALWAYS CONTAINS NICOTINE.

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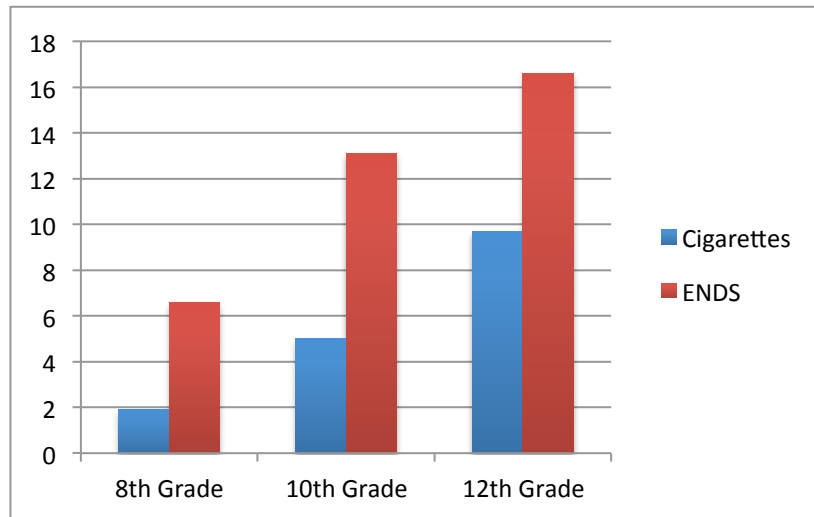
## Regulations

In 2016, the FDA finalized a rule that expands their authority to include regulation of e-cigarettes, all cigars, and hookah tobacco, among other products.<sup>5</sup> Because e-cigarettes are now federally regulated, they may be subject to federal tobacco taxes. Also, promotion and advertising of e-cigarettes can be strictly regulated so companies may no longer be able to employ strategies previously used to market their product, such as cartoon characters, celebrity endorsements, and flavors that appeal to children.<sup>6</sup>

Prior to the FDA's ability to regulate e-cigarettes, the 84th Texas Legislature passed a law prohibiting the sale, possession, or gift of e-cigarettes to minors. However, Texas has not yet passed statewide regulations on ENDS use. Many states and cities included ENDS in their smoke-free laws in order to prohibit the use of these products in public. As of 2016, over 38 Texas cities have amended their smoke-free ordinances to include language regarding ENDS.<sup>7</sup>

## Use of E-Cigarettes by Youth

The prevalence of vaping remains substantially higher than the use of any other tobacco product, including cigarettes as demonstrated in the graph below.<sup>9</sup>



This is concerning in part because use of e-cigarettes by adolescents may lead to use of traditional cigarettes.<sup>9</sup> In addition, according to the U.S. Surgeon General, adolescents are more susceptible to nicotine addiction than adults, adolescents' brains are particularly vulnerable to the effects of nicotine, and prolonged exposure to nicotine could have lasting consequences for brain development.<sup>10</sup>

### References

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