

# Critical Reasoning Practice

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## New-age gateway devices, the latest health threat

**W**hat happens when a portrayed healthy alternative turns out to be more dangerous than the original? This is precisely what is happening with new-age gateway devices such as e-cigarettes, vaping pens, Electronic Nicotine Delivery Systems, or ENDS, heat-not-burn (HNB) devices and other heated tobacco products (HTPs). All these devices were portrayed to offer a healthier alternative to smoking that would make it easier to quit tobacco. But the reality is quite different. Instead, they have caused a public health crisis, causing physical harm and affecting the mental well-being of children.

### A new pandemic

Instead of helping people quit tobacco, the manufacturers of these new-age gateway devices have discovered a lucrative market – children. This has led to a surge in youth vaping, creating a new pandemic. For example, according to the Centers for Disease Control and Prevention, in 2023, e-cigarettes were the most commonly used tobacco product among middle and high school students in United States, with 2.1 million (7.7%) students using e-cigarettes, including 5,50,000 (4.6%) middle school students. These devices are now getting a new generation hooked on nicotine and exposing them to potential long-term health consequences.

Children have been lured into trying and becoming addicted to e-cigarettes and vaping devices through a targeted marketing of flavours such as strawberry, cotton candy, pop rocks, and lemonade. In addition to alleged predatory marketing tactics, mental health issues and the negative effects of excessive technology use are also driving some children towards these devices.

The psychological factors affecting children operate on two levels.

First, children are increasingly susceptible to new-age devices from an early age. What was once an adolescent concern, for engaging in



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Portrayed as offering a healthier alternative to smoking and quitting tobacco, these devices are now causing a public health crisis among young people

distracting activities and developing addictive tendencies, has shifted, with even those under 10 years of age now showing signs of vulnerability. The age group most at risk remains between 10 and 20 years old, a demographic that manufacturers allegedly exploit through appealing advertising and enticing vaping flavours.

The colourful imagery created by these new-age gateway devices suggests that these products will bring happiness and elevate one's social status in the lives of targeted children. In their eagerness to fit in, children often prioritise peer preferences over their own, leading them to embrace vaping and other harmful behaviours. Those who vape are more likely to experience feelings of loneliness and social isolation when compared to their peers who abstain from these.

These psychological factors contribute to a troubling surge in children being drawn to enticing electronic devices such as vapes and e-cigarettes.

### A gateway to danger

The second aspect is the impact that such habits will have on the physical and mental well-being of children. While physical impacts such as lung damage and the spread of e-cigarette or vaping use-associated lung injury (EVALI) have become evident, we also need to shine the spotlight on the mental impact on children due to these new-age gateway devices.

The Australian Institute of Family Studies, an Australian Government statutory agency, has said that evidence indicates that vaping has negative effects on people who use e-cigarettes. With increasing rates of e-cigarette usage in Australia and worldwide, such new-age gateway devices are associated with mental health challenges such as depressive symptoms, anxiety, perceived stress, and suicide-related behaviours among adolescents. Key risk factors include friends' positive attitudes towards vaping and parental

smoking. E-cigarettes are highly addictive, particularly for individuals up to around the age of 25. This is a developmental stage which makes them especially vulnerable to structural and chemical changes induced by nicotine addiction. Once addiction takes root, it can increase the likelihood of developing other substance use disorders later in life, creating a cycle.

What is inside these new-age gateway devices that is causing more addiction?

### Survey's findings

In November 2022, *JAMA Network Open*, a medical journal published by the American Medical Association, revealed after a survey of 1,50,000-plus respondents, that more adolescent e-cigarette users reported using their first tobacco product within five minutes of waking when compared to users of cigarettes and other tobacco products combined. This finding highlights the strong grip that nicotine addiction has on the adolescent brain.

The study further said that e-cigarettes are highly engineered drug delivery devices designed to create and sustain addiction. Later versions of e-cigarettes, especially after 2015, started a more efficient delivery of nicotine. The addition of benzoic acid to the nicotine e-liquid produces protonated nicotine, which enhances the addictive potential by making it easier for users to inhale significant quantities of nicotine – levels that are difficult to achieve with traditional cigarettes or earlier e-cigarette models. This results in heightened addiction and an increased mental dependency on these devices.

These new-age gateway devices are also being used to experiment with harder substances such as cannabis, and even cocaine and heroin. Many children, teenagers, and even parents mistakenly believe that vaping only involves harmless water vapour and pleasant flavours. The reality is far more sinister and can lead to a lifetime of substance abuse issues.

**Question -1) Which of the following most accurately describes the main concern highlighted in the passage about new-age gateway devices like e-cigarettes?**

- A) These devices have successfully helped people quit smoking but have introduced other health issues.
- B) The devices were meant to be a healthier alternative but have led to a new public health crisis, especially among children.
- C) They have been effective in reducing adult smoking rates but have had little impact on youth.
- D) E-cigarettes and vaping devices are entirely safe but misunderstood by the public.

**Question -2) What is the author's likely attitude towards the marketing practices of new-age gateway device manufacturers?**

- A) Indifferent
- B) Supportive
- C) Critical
- D) Neutral

**Question -3) Which of the following can be inferred about the impact of new-age gateway devices on mental health?**

- A) They only affect the mental health of adults.
- B) Their mental health impact is limited to mild anxiety.
- C) They contribute to significant mental health challenges, including depression and suicidal behavior, especially among adolescents.
- D) Their impact on mental health is negligible compared to their physical effects.

**Question -4) Based on the passage, which of the following reasons is NOT mentioned as a factor leading children to use e-cigarettes and vaping devices?**

- A) Peer pressure
- B) Advertising and appealing flavors
- C) The belief that vaping is harmless
- D) A desire to improve academic performance

**Question -5) Which of the following best describes the term "new-age gateway devices" as used in the passage?**

- A) Devices that help users gradually quit smoking.
- B) Devices that offer a modern, safe alternative to traditional smoking.
- C) Devices that inadvertently introduce users, especially children, to nicotine addiction and other harmful substances.
- D) Devices that are primarily designed for recreational use by adults.

**Question -6) Which of the following statements, if true, would most weaken the argument made in the passage?**

- A) A new study finds that vaping is entirely harmless and has no addictive potential.
- B) Recent regulations have significantly reduced the sale of vaping devices to minors.
- C) New research shows that vaping helps more adults quit smoking than previously thought.
- D) A report reveals that traditional cigarettes are more harmful than vaping in every aspect.

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