truth initiative
freedom from nicotine addiction

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The Concentration of Nicotine in E-cigarettes Continues to Soar, Putting Young People at Higher Risk of Addiction

New Study Confirms That Many Disposable E-cigarettes Sold Today Come in Bigger Sizes and Are Cheaper Than Those Ever Sold Before

WASHINGTON, D.C. (May 5, 2025) – A new study published in the American Journal of Preventive Medicine reveals that total nicotine content in U.S. e-cigarette sales has increased by nearly 250% since 2020, with the sharpest increases found in disposable e-cigarettes. These products are not only highly popular among youth, based on findings in other research, but now contain significantly more nicotine at a lower cost. The latest study, conducted by the CDC Foundation and Truth Initiative – the nation's largest public health nonprofit dedicated to preventing youth and young adult nicotine addiction and empowering quitting for all – highlights the growing public health threat posed by today's evolving e-cigarette market.

From February 2020 to June 2024, while the number of e-cigarette units sold each month rose by just **34.7%**, the total monthly nicotine content sold soared by **249.2%.** This massive increase is largely driven by disposable devices which have gotten bigger and cheaper, delivering more nicotine at price points more accessible to young people. As found in other research, many of these products now deliver nicotine levels equivalent to a full carton of cigarettes in a single device. Higher levels of nicotine in these products are also associated with higher dependence, as stronger chemical hits lead to stronger withdrawals, putting young users at high risk of future nicotine addiction.

"Measurements that take into account both e-liquid volume and nicotine concentration paint a more realistic picture of the size and strength of e-cigarettes being sold in stores today," said Fatma Romeh M. Ali, PhD, health economist and consultant with the CDC Foundation. "Measuring e-cigarette sales in milligrams of nicotine, rather than just counting products, is critical to understanding the public health impact."

Key Findings:

- **Bigger devices, cheaper nicotine:** The nicotine content in disposable e-cigarettes jumped by 2,364.5%, while cartridge-based devices increased by just 1.3%. By mid-2024, disposables contained nine times more e-liquid than cartridge-based devices and were nearly four times cheaper per milligram of nicotine.

- **Disposables dominate:** Disposable e-cigarettes, favored by youth, accounted for **74%** of nicotine content sold and **58%** of units sold by mid-2024.
- **Flavored products remain widespread:** In 2023, nearly 90% of nicotine sold came from non-tobacco flavored products, which, based on other research, remain a key driver of youth use.

“A disposable e-cigarette today contains significantly more nicotine than it did just a few years ago, posing greater addiction risks—especially for young users,” said Megan Diaz, PhD, research director at Truth Initiative. “These findings raise serious concerns about youth access and affordability because disposables are not only the most popular e-cigarette product among youth, but they’re also the cheapest way to obtain large amounts of nicotine and they come in appealing flavors.”

These findings build on prior research published in Tobacco Control which first sounded the alarm on e-cigarette products increasing in size and strength while simultaneously decreasing in cost. Understanding how much nicotine is being sold provides a clearer picture of potential public health impact and can help inform stronger policy and public health strategies to address the risks associated with increasingly potent and cheap nicotine products, particularly among young people.

About Truth Initiative
Truth Initiative® is a national nonprofit public health organization committed to a future free from lifelong addiction, fostering healthier lives and a more resilient nation. Our mission is to prevent youth and young adult nicotine addiction and empower quitting for all. Through our evidence-based, market-leading cessation EX® Program and national public education campaigns, we lead the fight against youth and young adult tobacco use. Learn more at truthinitiative.org.

About the CDC Foundation
The CDC Foundation helps the public health system, including the Centers for Disease Control and Prevention, save and improve lives by unleashing the power of partnerships to protect the health, safety and security of all communities, everywhere. Since 1995, the CDC Foundation has launched more than 1,450 programs aimed at protecting communities across the country from a variety of health threats—from chronic disease conditions including cardiovascular disease and cancer, to infectious diseases like malaria and HIV, to emergency responses such as Ebola and Zika. The Foundation managed hundreds of programs in the

United States and in more than 100 countries last year. Learn more at cdcfoundation.org.

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