

A Matter of Life and Breath – The Next Generation of Nicotine Addiction

Michael Salem, M.D., FACS
Thomas Ylioja, Ph.D., MSW

The recent outbreak of severe and deadly lung injury to nearly 2,500 e-cigarette users has exploded the myth of safe vaping. While recent evidence suggests that a variety of agents such as vitamin E and THC may be at fault for many of the severe lung illnesses, not all fit neatly in this box. Vaping is harmful, particularly for our young people, and we are still learning just how harmful these products really are.

Nicotine in cigarettes and e-cigarettes poses a unique threat to the health of teens and preteens. Adolescence is a crucial period of brain development when learning capacity, decision making, working memory, reward processing and emotional regulation all grow and mature. Nicotine, especially in the high levels delivered by e-cigarettes, profoundly alters this process, priming the brain for future addiction, mood disorders, intellectual problems, and other risky behaviors.

Tobacco and e-cigarette companies have long known that flavors appeal to young people and encourage tobacco use. Studies show that the vast majority of adolescents first use a flavored vaping product. Now, when use of traditional tobacco products among adolescents is at an all-time low, nicotine vaping among high school and middle school age children continues to skyrocket, with one in three high schoolers vaping. **We have a new generation of youth addicted to nicotine** discovering just how hard it is to quit.

At **National Jewish Health**, the nation's leading respiratory care hospital and operator of 18 state tobacco Quitlines, we help people become free from nicotine addiction and have served callers as young as age 11. Recently, we launched an enhanced tobacco cessation program, *My Life, My Quit™*, specifically for teens who want to stop using nicotine products. This program helps teens in real-time over the phone, online or by texting to engage them using their preferred way to communicate. While there are a few other programs to help teens, it is clear – we need to substantively expand and broaden our efforts to address the rapid growth of addicted teens and adults.



Where do we go from here? First, we need to ban e-cigarettes that are not FDA-approved for smoking cessation. At a minimum, the FDA should reduce the level of nicotine to levels that cannot sustain addiction. We also urge the FDA to deny marketing approval to e-cigarette companies that sell flavored vape pods. Further, we advocate for regulation of vaping devices, including making devices tamper-proof and nonfunctional if opened. Marketing directed at children and teens must stop, and vaping should be banned in all public places and in schools. These measures are within the purview of the FDA for immediate action. We must hold tobacco and e-cigarette conglomerates accountable for the health issues and deaths caused by this unregulated, open season on creating corporate profit from addiction.

Next, we need to focus on research. National Jewish Health and other institutions have worked with the Centers for Disease Control to understand what happens when e-cigarette chemicals are inhaled into the lungs, in addition to treating children and adults who have been affected with lung injury. Early studies show ethylene glycol and non-nicotine compounds in vape liquid promote inflammation and mucus production while disrupting the immune system. This process likely sets up a person for future serious lung injury. More attention to research is needed and must be supported.

We are at a crossroads. Over the last 50 years, we fought and made gains in the battle against Big Tobacco and have seen dramatic declines in smoking. But now, we have allowed that same industry to create a whole new generation addicted to nicotine – this time through vaping. Let's learn from the lessons of the past and unite to fight this threat to our young people. It truly is a matter of life and breath.

Michael Salem, M.D., FACS, is President & CEO of National Jewish Health, Denver, Colorado.

Thomas Ylioja, Ph.D., MSW, is Clinical Director of Health Initiatives at National Jewish Health, including the tobacco cessation program.

*One in a series of commentaries by leading physicians and researchers at **National Jewish Health** in Denver, Colorado. **National Jewish Health** is also in New York City at the **Mount Sinai** | **National Jewish Health Respiratory Institute** and in Philadelphia at the **Jane and Leonard Korman Respiratory Institute, Jefferson Health** | **National Jewish Health**.*