

## **Albany County Board of Health Comment on the health effects of ENDS (Electronic Nicotine Delivery Systems)**

Electronic cigarettes (Electronic nicotine delivery systems hereafter referred to as ENDS) are not approved by the FDA for smoking cessation (1), but Americans trying to quit smoking use these products more frequently than FDA approved cessation aids (2). Data on effectiveness and safety for these products is currently limited, and little is known about the effectiveness for smoking cessation or the long-term health risks of these products.(3)

Current FDA approved products for tobacco cessation in adults over 18 (1)include:

- nicotine replacement therapy
- bupropion
- varenicline

Treatment with nicotine replacement therapy and bupropion achieves quit rates of approximately 25 to 26% at 6 months and 20% at one year (4), with slightly higher quit rates for combination therapy than for either agent alone (5). Varenicline has been shown to perform better than bupropion, all forms of nicotine replacement therapy and placebo, with a 26% quit rate through 24 weeks of follow up (6).

Numerous scientific studies have demonstrated the efficacy and safety of these agents (7)

In a published report from 2019, based on a study done in the United Kingdom, ENDS use resulted in abstinence from tobacco smoke of 18%, compared with a nicotine replacement group that achieved a 9.9% quit rate at one year. However, 80% of the ENDS users were still using ENDS at the one year mark, where as 9% in the nicotine group were still using nicotine replacement. (8) This study also noted a high rate of individuals who combine ENDS use and tobacco use after attempts to quit. All available studies note the importance of continued research. The current quality of evidence on the effectiveness of ENDS as a smoking cessation therapy is low due to the small number of studies.(3) Thus, the claim that the ENDS is an effective means to quit smoking is not considered proven among the scientific community.

### **What are the potential risk of ENDS for current tobacco smokers?**

ENDS vapor contains many toxins and exerts potentially adverse biologic effects on human cells (9,10,11), although toxin levels are lower than those of tobacco smoke. Data on health effects from long-term use is lacking. More studies need to be done to establish safety guidance.

Online poll data does suggest a subjective preference for flavored ENDS for use by smokers (12).

### **Why ban flavored tobacco products?**

The FDA banned all flavored tobacco cigarettes, with the exception of menthol in 2009, as Congress agreed that flavors make cigarettes more appealing to youth and increase their exposure to toxic substances. When flavored ENDS were first marketed, ENDS did not fall under the FDA's regulatory

umbrella. The FDA mandated e-cigarette products to be regulated as tobacco products in 2016. Companies have manufactured over 15,000 e liquid flavors, and youth use expanded exponentially. Current national and NY state statistics show that youth and young adults are the primary users of ENDS(13,14). In New York state, high school students use ENDS at rates five times higher than adults over the age of 25(15). Also in New York State, electronic cigarette use by youth increased 160% between 2014 and 2018 (13). The surgeon general has declared youth vaping a national public health epidemic (14). Youth and young adults say their reasons from trying and using ENDS are flavor and taste, curiosity and belief that they are less harmful than other tobacco products (14).

Nicotine is a highly addictive chemical and harmful to the adolescent developing brain (16). Youth are particularly susceptible to addiction. Nicotine has been shown to prime the developing brain for addiction to alcohol and other drugs. Overall, fewer than 1 in 10 people with a nicotine addiction caused by cigarette smoking are able to quit nicotine (17,18). ENDS use by youth has been shown to increase risk for cigarette smoking, and for dual cigarette ENDS use (19). In New York state, from 2016 to 2018, the rate of cigarette smoking increased for the first time since 2000 (13).

### **Other current regulatory efforts on flavored ENDS**

FDA and NYS are both considering bans on flavored ENDS. Hawaii has also considered.

### **Conclusions:**

There is not enough known at this time to clearly advise on the potential health benefits or health harms of ENDS use to the nicotine using population. Further studies are warranted.

Data demonstrates increase in youth use of ENDS is unprecedented and is a major public health concern. Nicotine is an extremely addictive substance and poses harm to the developing brain. Scientific evidence demonstrates that flavors play a critical role in the popularity of these products among youth. These flavored products have the potential to undermine the nation's overall efforts to reduce youth tobacco use and putting a new generation at risk of nicotine addiction and serious health harms that result from tobacco use.

Given these considerations, the position of the Albany County Department of Health and the Albany County Board of Health is to support the passage of legislation, at the local and state level, banning the sale of flavored tobacco products at this time.

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