LEARN TO GROW, INC.

THE DANGERS OF VAPING

RESOURCE GUIDE

WHAT ARE E-CIGARETTES?

Electronic cigarettes, also known as e-cigarettes, e-vaporizers, or electronic nicotine delivery systems, are battery-operated devices that people use to inhale an aerosol, which typically contains nicotine (though not always), flavorings, and other chemicals. They can resemble traditional tobacco cigarettes (cig-a-likes), cigars, or pipes, or even everyday items like pens or USB memory sticks.

Other devices, such as those with fillable tanks, may look different. Regardless of their design and appearance, these devices generally operate in a similar manner and are made of similar components. More than 460 different e-cigarette brands are currently on the market. Some common nicknames for e-cigarettes are:

- e-cigs
- e-hookahs
- hookah pens
- vapes
- vape pens
- **mods (customizable, more powerful vaporizers)**

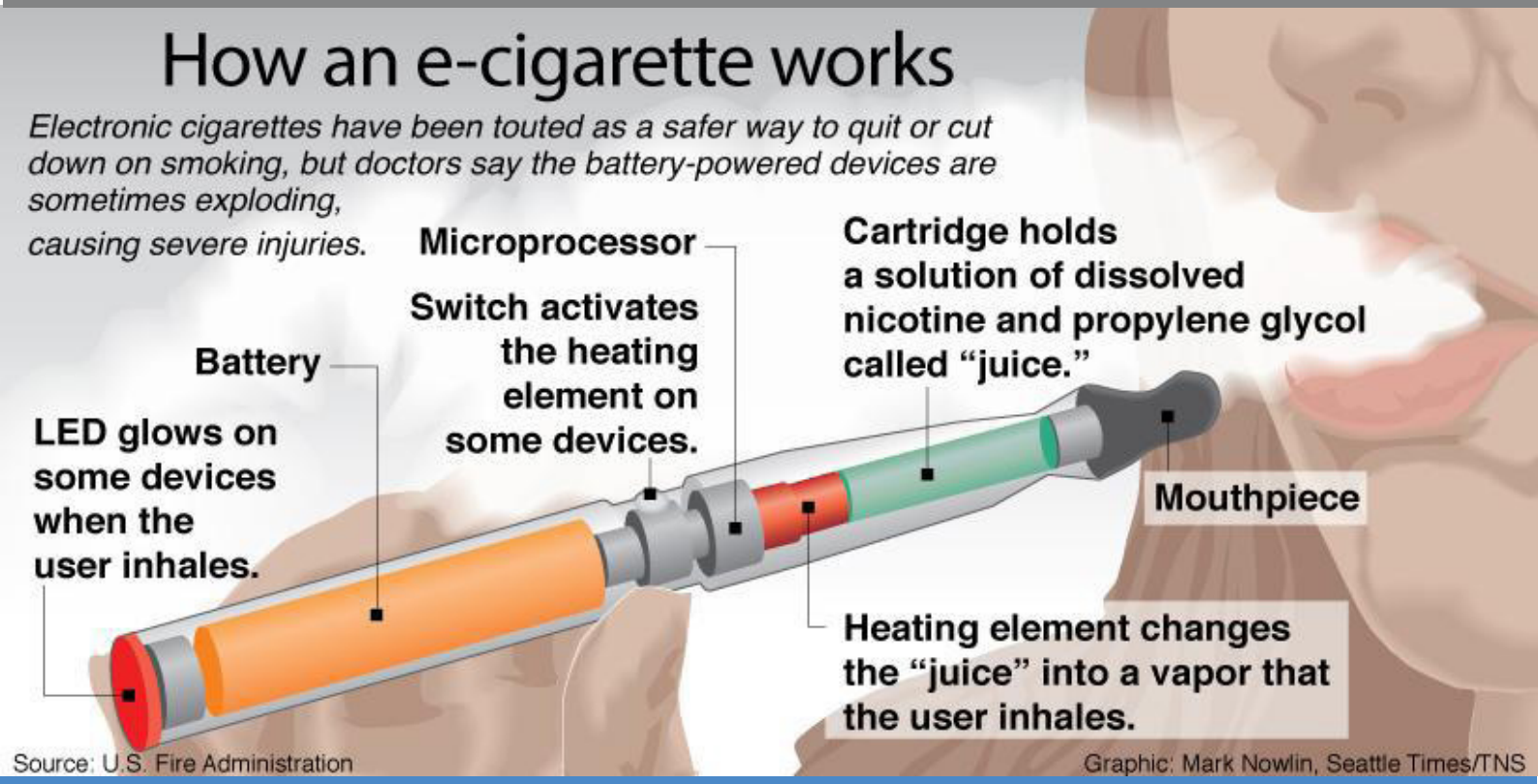
E-cigarettes are a relatively new tobacco product that have been sold in the U.S. for about a decade The e-cigarettes currently in the U.S. marketplace have not been systemically reviewed by the Food and Drug Administration to determine their impact on lung health. While much remains to be determined about the lasting health consequences of these products, the American Lung Association is very troubled by the evolving evidence about the impact of e-cigarettes on the lungs.

HOW DO E-CIGARETTES WORK?

Most e-cigarettes consist of four different components, including:

- a cartridge or reservoir, which holds a liquid solution (e-liquid or e-juice) containing varying amounts of nicotine, flavorings, and other chemicals
- a heating element (atomizer)
- a power source (usually a battery)
- a mouthpiece that the person uses to inhale

In many e-cigarettes, puffing activates the battery-powered heating device, which vaporizes the liquid in the cartridge. the person then inhales the resulting aerosol or vapor (called vaping).



ENDS: Electronic nicotine delivery systems go by many names. The most common name is "e-cigarettes," but others such as e-cigs, vapes, vape pens, mods and tanks are also common terms. Most recently, new products, such as JUUL, have created brand-centric terms for product use ("JUULing"). For this resource, the entire category will be referred to as "e-cigarettes."

DANGERS OF E-CIGARETTES!

The Inhalation of Harmful Chemicals Can Cause Irreversible Lung Damage and Lung Disease

In January 2018, the National Academies of Science, Engineering and Medicine released a consensus study report that reviewed over 800 diffe-rent studies.

That report made clear: using e-cigarettes causes health risks. It concluded that e-cigarettes both contain and emit a number of potentially toxic substances. The Academies' report also states there is moderate evidence that youth who use e-cigarettes are at increased risk for cough and wheezing and an increase in asthma exacerbations.

• A study from the University of North Carolina found that the two primary ingredients found in e-cigarettes—propylene glycol and vegetable glycerin—are toxic to cells and that the more ingredients in an e-liquid, the greater the toxicity

• E-cigarettes produce a number of dangerous chemicals including acetaldehyde, acrolein, and formaldehyde. These aldehydes can cause lung disease, as well as cardiovascular (heart) disease.

• E-cigarettes also contain acrolein, an herbicide primarily used to kill weeds. It can cause acute lung injury and COPD and may cause asthma and lung cancer.

• Both the U.S. Surgeon General and the National Academies of Science, Engineering and Medicine have warned about the risks of inhaling secondhand e-cigarette emissions, which are created when an e-cigarette user exhales the chemical cocktail created by e-cigarettes.

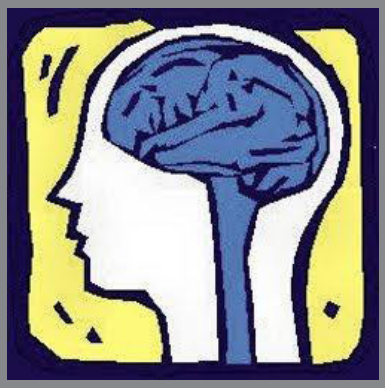
• In 2016, the Surgeon General concluded that secondhand emissions contain, "nicotine; ultrafine particles; flavorings such as diacetyl, a chemical linked to serious lung disease; volatile organic compounds such as benzene, which is found in car exhaust; and heavy metals, such as nickel, tin, and lead."

• The Food and Drug Administration has not found any e-cigarette to be safe and effective in helping smokers quit. If smokers are ready to quit smoking for good, they should call 1-800-QUIT NOW or talk with their doctor about finding the best way to quit using proven methods and FDA-approved treatments and counseling.

E-CIGARETTES ARE UNSAFE FOR YOUNG PEOPLE

No matter how it's delivered, nicotine is harmful for youth and young adults. E-cigarettes typically contain nicotine as well as other chemicals that are known to damage health

- For example, users risk exposing their respiratory systems to potentially harmful chemicals in e-cigarettes. Read about these and other risks young people face if they use e-cigarettes.



BEHAVIOR RISKS

E-cigarette use among youth and young adults is strongly linked to the use of other tobacco products, such as regular cigarettes, cigars, hookah, and smokeless tobacco.

Some evidence suggests that e-cigarette use is linked to alcohol use and other substance use, such as marijuana. And certain e-cigarette products can be used to deliver other drugs like marijuana.

HEAT-NOT-BURN PRODUCTS

In addition to e-cigarette products, tobacco companies have introduced "heat-not-burn" tobacco products. These devices work by heating tobacco instead of burning it. Sometimes the tobacco is treated with a humectant, like propylene glycol, to produce an aerosol inhaled by the user. Manufacturers claim this delivery method is substantially less harmful than traditional cigarettes, but current data on the health effects of these devices are sparse (and most of what has been published has been by tobacco industry scientists).

While these products have not been approved by the FDA for use in the U.S., a new product application for IQOS — a heat-not-burn product by Philip Morris International — is currently pending. Data in foreign markets submitted by Philip Morris indicate that dual use of heat-not-burn products along with cigarettes is, by far, the most dominant pattern of use, which raises substantial issues about what impact they might have on overall public health. (Read comments from Truth Initiative® on the IQOS application.)

CAN E-CIGARETTES HELP A PERSON QUIT?

Some people believe e-cigarettes may help lower nicotine cravings in those who are trying to quit smoking. However, e-cigarettes are not an FDA-approved quit aid, and there is no conclusive scientific evidence on the effectiveness of e-cigarettes for long-term smoking cessation. It should be noted that there are seven FDA-approved quit aids that are proven safe and can be effective when used as directed.

E-cigarettes haven't been thoroughly evaluated in scientific studies. For now, not enough data exists on the safety of e-cigarettes, how the health effects compare to traditional cigarettes, and if they are helpful for people trying to quit smoking.

READY TO QUIT?

YOU can quit smoking today. We can help. When you are ready, we are here. Improve your chances of quitting by calling the **Georgia Tobacco Quit Line (GTQL)**.

English: 1-877-270-STOP (877-270-7867)
Spanish: 1-877-2NO-FUME
Hearing Impaired: 1-877-777-6534
Hours of Operation: Available every day, 24 hours a day, 7 days a week (including holidays)

POINTS TO REMEMBER

• Electronic cigarettes are battery-operated devices that people use to inhale an aerosol, which typically contains nicotine (though not always), flavorings, and other chemicals. In many e-cigarettes, puffing activates the battery-powered heating device, which vaporizes the liquid in the cartridge or reservoir. The person then inhales the resulting aerosol or vapor (called vaping).

• E-cigarettes are popular among teens. Under U.S. Food and Drug Administration (FDA) regulations designed to protect the health of young Americans, minors can no longer buy e-cigarettes in stores or online

• Nicotine stimulates the adrenal glands to release the hormone epinephrine (adrenaline) and increases the levels of a chemical messenger in the brain called dopamine. Pleasure caused by nicotine's interaction with the brain's reward system motivates some people to use nicotine again and again, despite possible risks to their health and well-being.

• Research so far suggests that e-cigarettes are less harmful than cigarettes when people who regularly smoke switch to them as a complete replacement. But e-cigarettes can still damage a person's health.

• E-cigarettes can lead to nicotine addiction and increased risk for addiction to other drugs.

• E-cigarette use also exposes the lungs to a variety of chemicals, including those added to e-liquids, and other chemicals produced during the heating/vaporizing process.

• More research is needed to determine if e-cigarettes may be as effective as smoking cessation aids already approved by the FDA.

CITED RESOURCES

- Learn to Grow, Inc
- H.E.A.R.T. Coalition
- National Institute on Drug Abuse (NIH)
- Dailygazette.com/ U.S. Fire Administration
- e-cigarettes.surgeongeneral.gov
- American Lung Association
- Campaign for Tobacco Free Kids
- Truth Initiative
- Georgia Department of Public Health (DPH)

Web Links:

https://e-cigarettes.surgeongeneral.gov/documents/SGR_ECig_ParentTipSheet_508.pdf

https://www.cdc.gov/tobacco/campaign/tips/quit-smoking/quitline/index.html

https://www.cdc.gov/tobacco/campaign/tips/quit-smoking/guide/quit-plan.html?s_cid=OSH_tips_D9400

https://smokefree.gov/smokefreetxt?s_cid=OSH_tips_D9402

https://www.lung.org/assets/documents/stop-smoking/e-cigarettes-parents.pdf

https://www.lung.org/assets/documents/stop-smoking/e-cigarettes-schools.pdf

https://www.lung.org/assets/documents/stop-smoking/e-cigarettes-teens.pdf

https://www.lung.org/assets/documents/stop-smoking/external-e-cigarette-resources.pdf

https://www.lung.org/assets/documents/stop-smoking/impact-of-ecigarettes-on-lung.pdf

https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations

https://dph.georgia.gov/ready-quit

https://dph.georgia.gov/sites/dph.georgia.gov/files/2018%20Electronic%20Cigarette%20Use%20among%20Youth%20in%20Georgia.pdf

https://www.tobaccofreekids.org/assets/factsheets/0382.pdf