

August 2019 post: Impact of e-cigarettes on the lungs (*by Mandakini Sadhir, MD & Cori Morgan, APRN*)

A 15 y/o WF with no significant medical history presented to clinic with concerns of shortness of breath with exertion and tachycardia. She reported symptoms of nausea, difficulty breathing when taking deep breaths and feeling overall ill for last 5 days. Reported having increased anxiety, chest pain with deep breaths and chills. She is on oral contraceptive pills daily for about 8 months for dysmenorrhea. She uses JUUL regularly with friends over the last year. Reported that one JUUL pod can last 1-3 days. She denies marijuana use, alcohol use, or use of any other illicit substances today. She denies recent stressors. She denies cold symptoms, headache, neck pain, fever. She took ibuprofen and Tylenol for symptom relief with minimal improvement. **Vitals:-** Temp: 98.4, HR: 120, BP: 116/62, BMI: 20.73, O2 Sats: 93%

Pertinent physical findings : moderately dry cough, skin clammy, tachycardic, breath sounds clear to auscultation b/l. Rest of exam was unremarkable.

Patient was sent to ER for further evaluation. She had sinus tachycardia on EKG, a negative urine pregnancy test, elevated D Dimer. CT Chest for PE was done and it was negative for clot. CT scan, however, showed ground glass opacities concerning for non-cardiogenic edema vs. drug toxicities in bilateral lower lung bases and with mildly dilated distal pulmonary vasculature.

She was discharged from ER and was educated on use of JUUL. She was seen in clinic one week later with no complaints. She has reduced JUUL use significantly to one pod weekly. Plan was to continue to follow up for symptoms, repeat imaging and consider follow up with Pulmonologist.

According to [monitoring the future](#) study, 37.3% of 12th grade students reported vaping nicotine in past year. JUUL is popular among teens. The e-cigarettes 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, there is evolving evidence about the impact of e-cigarettes on the lungs.

If teens present with respiratory symptoms and have a history of vaping, it is important to consider e-cig effects as a differential diagnosis.

Recent News:

- Gizmodo: Teens in Wisconsin Are Being Diagnosed With Severe Lung Damage That May Be Linked to Vaping.

<https://gizmodo.com/teens-in-wisconsin-are-being-diagnosed-with-severe-lung-1836732377>

- CBS News: Teens are being hospitalized for lung damage after vaping — "It's mind-boggling," doctor says.

<https://www.cbsnews.com/news/teens-hospitalized-for-lung-damage-after-vaping-e-cigarettes-juul-health-risks/?ftag=CNM-00-10aag7e>

- Fox News: Vaping among Illinois teens possibly tied to increase in hospitalizations, health officials say.

<https://www.foxnews.com/health/illinois-teens-hospitalized-vaping>

Patient and Provider Information:

<http://www.uky.edu/breathe/tobacco-policy/quick-facts-topic/e-cigarettes-and-hookah>

Community Involvement:

#iCANendthetrend Program: The primary goal is to provide tobacco use prevention services to youth, families, and community members across Kentucky.

#iCANendthetrend is an evidence-informed program that was developed by University of Kentucky researchers and college tobacco-free ambassadors to help build awareness on the dangers of tobacco use, including e-cigarette use and the costs associated with addiction. The program integrates developmentally appropriate skill building aligned with the National Health Education Standards, including refusal skill techniques and identifying ways youth are being targeted by the tobacco industry.

If you are interested in learning more about the program or would like to discuss the #iCANendthetrend college facilitators coming to school, please contact Dr. Melinda Ickes: melinda.ickes@uky.edu.