Our Speakers

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Outline

- Current State of COVID – 19
- E-cigarettes & Vaping
- COVID-19 Resources
Poll Question

• We’d like to know who is here today.
• What “title” best describes you?

Current State of COVID-19

Tonya Winders
In the News

• “We’re not in a good place,” Dr. Anthony Fauci, the nation’s leading expert on infectious diseases, warned.
  • Covid-19 cases are on the rise again across the United States as more and more states have loosened restrictions put into place to slow the spread of the virus.
  • President Trump is back at the White House after being treated at Walter Reed Army Hospital for COVID-19
    • Many of the White House staff have also tested positive
  • Only 10 states are seeing downward trends in new Covid-19 cases, and NYC now has a surge

In the News

• Vaccine Tracker – NY Times
  • Researchers are testing 44 vaccines in clinical trials on humans, and at least 91 preclinical vaccines are under active investigation in animals.

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Vaccines testing safety and dosage
Vaccines in expanded safety trials
Vaccines in large-scale efficacy tests
Vaccines approved for early or limited use
Vaccines approved for full use
COVID-19 Cases in US by Date Reported

New Cases by Day

Poll Question

• What is the trend of the rate of new COVID-19 cases in your area?
COVID-19 Information – Allergy & Asthma Network

- COVID-19 Information Center
  - FAQ’s
  - Mental Health Tools
  - Infographics
  - Much more . . .
- COVID-19 School Resources
  - National recommendations
  - Network Notes for Parents
  - Planning Tools
  - Asthma Care Resources
  - Posters for School

Coronavirus: What You Need to Know
Check here weekly for updated information and news webinars, fact sheets, podcasts and infographics to help you.

- COVID-19 FAQs
- Articles Related to COVID-19
- COVID-19 Myths Busted
- Asthma and Covid-19
- Mental Health Tools
- Distinguishing between COVID-19 vs Allergies vs Flu
- Take Our Survey: How Has Your Life Been Affected by Asthma and COVID-19?
- COVID-19 School Resources for Allergies & Asthma

E-cigarettes & Vaping

Dr. Mary Cataletto
Impact of COVID-19 on Smoking & Vaping

Social Isolation

Anxiety

The Perfect Storm

COVID-19: RISK OF INCREASE IN SMOKING RATES AMONG ENGLAND’S 6 MILLION SMOKERS AND RELAPSE AMONG ENGLAND’S 11 MILLION EX-SMOKERS, PATWARDAN, BJGP 2020

Percentage of adults aged 18 years or older who reported any tobacco product use “every day” or “some days”

Overall use: 19.7%.

NORTHEAST: 17.5%

WEST: 15.3%

MIDWEST: 23.6%

SOUTH: 21.4%

https://www.cdc.gov/tobacco/data_statistics/mmwr/byyear/2019/mm6845a2/index.html
Active, Second & Third Hand Smoke Exposure

There is no safe level of tobacco exposure

**Active Smoking**
- Lung cancer
- COPD
- More URTIs
- More LRTIs
- CV Disease
- Stroke

**Second Hand**
- More ear infections
- More asthma
- More asthma exacerbations

**Third Hand**
- Sudden Infant death
- Respiratory infections, including Bronchiolitis
- More ear infections
- More severe asthma
- Slowed lung growth

[https://www.cdc.gov/tobacco/basic_information/secondhand_smoke/](https://www.cdc.gov/tobacco/basic_information/secondhand_smoke/)

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Disparities in Second Hand Smoke Exposure

Some groups have higher exposure to secondhand smoke and its harmful effects

**1 in 3**
More than 1 in 3 nonsmokers who live in rental housing are exposed to secondhand smoke.

[www.cdc.gov/vitalsigns/tobacco](www.cdc.gov/vitalsigns/tobacco)
E-cigarette use soars at U.S. high schools

A growing percentage of high school students report using e-cigarettes within the last 30 days.

Source: National Youth Tobacco Survey, U.S. Food and Drug Administration
A. Bhandari, 5/30/2019

E-cigarette use surge led to uptick in overall tobacco use — Reversing Previous Declines

Current Use of Any Tobacco Product

Percentage of Students

2015 2016 2017 2018

High School Students

7.2%

27.1%

Mobile School Students

Why is this concerning?

E-cigarette use has increased dramatically, while current cigarette use has dropped. Ongoing progress toward reducing overall tobacco use.

E-cigarettes and other tobacco products are highly toxic and can cause serious harm to health. They also can impair cognitive development, contribute to obesity, and increase risk of tobacco-related diseases. Inhaling and swallowing electronic cigarettes, or heated tobacco products, is not safe. Tobacco smoke, nicotine, and other toxicants in these products are harmful. Children and young people must not start using e-cigarettes. E-cigarettes are not a safe alternative to cigarettes.
E-cigarette Use Among Middle & HS Students in U.S.

In 2020, about 1.8 million fewer U.S. youth are current e-cigarette users compared to 2019.

However, 3.6M U.S. youth still currently use e-cigs.

There is a notable uptick in use of DISPOSABLE e-cigs by youth.

More than 8 out of 10 current youth e-cig users use flavored e-cigs.

Study Shows Teen Vapers Up to 7X More Likely to Get COVID-19 Than Non-users
Nicotine

- Stimulant
- Highly Addictive
- Causes changes in brain chemistry

Nicotine in the Brain
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.

Acute Exposure to Vaping

- Damages airway cells
- Decreases macrophage
- Decreases neutrophil antimicrobial function

Impaired Microbial Defenses

- Increased mucus production and altered mucus clearance are hallmarks of airway inflammation\(^1\)
- EC vapor appears to have potential to impair mucociliary clearance\(^2\)

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Vaping & Asthma

Numerous studies have implicated exposure to reactive carbonyls, including formaldehyde, acetaldehyde, & acrolein, in the pathogenesis & exacerbation of asthma

Aerosolization of propylene glycol and glycerin results in the formation & inhalation of reactive compounds known to exacerbate asthma

Many users prefer to vape at high temperatures as more aerosol is generated

SARS-CoV-2 Under the Microscope

www.cdc.gov
https://www.globalhealthnow.org
Pathogenesis of COVID-19

Inhaled virus SARS-CoV-2 likely binds to epithelial cells in the nasal cavity and starts replicating in the nose, pharynx, larynx, trachea, bronchi, and bronchioles.

- RNA virus enters human cells when their glycoproteins bind proteins on the cell surface.
- Undergo a structural change that allows the viral membrane to fuse with the cell membrane.
- Viral genes can then enter the host cell to be copied.
- Virus copies are released from the host cell where they can infect more cells.

Potential Impact of Smoking & Vaping on Vulnerability & Severity Risk From COVID-19

**Vulnerability:**

- Existing lung disease or reduced lung capacity
- Behaviors facilitating transmission: Shared vape devices, hand to mouth transmission

**Severity Risk:**

- Reduced cough sensitivity
- Impaired mucociliary function
- Immune suppression
- Risk of Pneumonia


Asthma as a Risk Factor for COVID-19

- Asthmatics are at risk for more severe outcomes with common cold viruses
- Severity of virus induced asthma exacerbations is increased with poor symptom control
- Many asthmatics have deficient & delayed innate antiviral immune responses with deficiency and delay in lung cell interferon responses
- Individuals with moderate to severe asthma may be at higher risk for the development of pneumonia and acute respiratory disease
- Majority of hospitalized adults with COVID 19, 89.3% had once or more underlying medical conditions, the most common being obesity, HTN and CLD
- In 18 – 49 y/o’s obesity was the most prevalent underlying condition, followed by CLD (primarily asthma)


Primary Care-relevant Interventions for Tobacco & Nicotine Use Prevention & Cessation in Children & Adolescents Updated Evidence Report & Systematic Review for US Preventive Services Task Force

Prevention
- 14 trials; 9 trials enrolled only nonsmokers at baseline;
- 5 trials enrolled both smokers & nonsmokers
- n = 25,049; Mean age 12.8 y; Range: 7-19 y; Follow-up: av 12 m (range 7-36 m)
- 6 studies used a single intervention; 8 used combination

Interventional Content
- Health education
- Readiness to change
- Parenting skills

Delivery
- Print materials
- Face to face counseling
- Telephone support
- Computer based intervention

JAMA 2020
Result of Prevention Trials in Children & Teens

Most studies reported fewer children started using tobacco products after behavioral intervention.

Although not all individual studies showed significance, the pooled data demonstrated significance 7.4 vs 9.2% initiated smoking.

No effect modification was found by intervention type, setting or target population.

Selph, S et al JAMA 2020

Cessation Trials – Most Used Combinations

**Review**
- 9 Trials; 4 trials only smokers; 5 both smokers & nonsmokers
- N=2516; av age 16.6 y (range: 12-19 y)

**Interventional Content**
- Readiness to change
- Health Education

**Delivery**
- Face to Face
- Telephone
- Computer
- Print
Results of Cessation Trials in Children & Teens

Metanalysis of all 9 trials reported a risk reduction after the intervention that was not statistically significant.

- Approximately 80% of participants in the intervention group were still smoking at the end of the study (6-18 months) as compared to the control group (84.1%).

No factors were identified that modified the effect of the interventions.

Lessons learned during COVID -19

1. Prevent initiation of tobacco use especially among youth and young adults
2. Promote cessation and assist tobacco users to quit
3. Protect people from secondhand smoke

Follow public health guidance (eg. Shelter in place, Avoid sick contacts, Social distancing; hand washing; Wear a face mask in public)

Make sure you have enough medication

Follow your Asthma Action Plan

https://www.cdc.gov/tobacco/about/osh/state-fact-sheets/wisconsin - accessed 5/6/20
(Image 2 was changed to reflect virtual health visits and remote education.)
COVID-19 Resources

Tonya Winders

COVID-19 Infographics
Poll Question

• Have you visited Allergy & Asthma Network’s web-based COVID-19 Information Center?

Questions?

Please record your questions in the Question box on your webinar control panel
We will address as many questions as we can
Join us on **October 27th** for the 15th webinar in our COVID-19 Webinar Series -

**Experts Answer YOUR Questions about COVID-19, Asthma, Allergies & the Flu**

**Considering COVID-19: E-cigarettes & Vaping with Asthma**

Thank you for listening!
Get guidelines-based information at allergyasthmanetwork.org