What the JUUL?
Vaping, electronic cigarettes and harmful new trends
Lancette VanGuilder, RDH, BS
Colorado Dental Hygienists Association, November 2019 - 1.5 CE

- Severe and sudden lung tissue damage, death of vital cells in lining of the lungs
- Unable to breath, must be put on ventilator
- Pneumonia like illness
- Not viral or bacterial
- Vomiting, chills, fever, cough, body aches, fatigue
- Flu like symptoms
- Steroids may recover and may not, permanent damage?

EVALI: diagnosis out of exclusion
CDC Announces New Name for Vaping-Related Illness: EVALI
The illness is called EVALI, which stands for "e-cigarette or vaping product use-associated lung injury"
October 15, 2019 02:58 PM
https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease/healthcare-providers/index.html

What We Know: Can’t Pinpoint
- Many causes are being looked at
- Vaping products have been poor regulated
- Black Market products
- Even "regulated" products contain or generate chemicals that can make people sick
What We Know: No Specific Product

- No Substance
- No Product
- No Brand
- No Additive

THC only
THC and nicotine
Nicotine only

What We Know: All VAPOR is harmful

- It is not water
- Not necessarily a safe alternative to smoking
- Long term effects are not known

Tobacco Cessation

- Counsel people on quitting
  - Colorado QuitLine
  - 1-800-QUIT-NOW
  - Free FDA Approved treatments
  - Encourage parents and teachers, coaches to talk with kids
  - Colorado
    - Tobaccofree.co.org
    - Colorado School Safety Resource Center

What We Know: AVOID

- Black Market Products
- Do not buy off the street
- Avoid vaping THC
- Do not “DIY”
- Do not modify vaping products
  - Batteries
  - Liquids
  - Additives

Clinical Evaluation: History

- No diagnostic test
- Concomitant infection
- Respiratory
  - Cough, chest pain, shortness of breath
  - GI
  - Ab pain, vomiting, diarrhea
  - May be first sign before Respiratory
- Constitutional
  - Fever, chills, weight loss
- Habits
  - Vaping, JUUL, THC, Cannabis, oils, dabs, where/when/how
- Respectful: Private, non judgmental, empathetic
Clinical Evaluation: Testing

- Complete Blood Panel
- Infectious Disease Testing
  - Rule out flu, pneumonia, legionella and other opportunistic infections

Clinical Evaluation: Imaging

- Chest X-ray
- Chest Tomography
  - Evaluate disease progression or when Chest X-ray does not correlate with symptoms

Additional Considerations

- Referrals
  - Pulmonary
  - Critical Care
  - Toxicology
  - Infectious Disease
  - Psychology/psychiatry
  - Addiction

Additional Testing

- Biopsies
- Bronchoalveolar lavage

Medical Treatment

- Corticosteroids
  - Only after fungal pneumonia eliminated
  - Many patients have improved after initial administration
- Antibiotics
  - Early intervention for community acquired pneumonia
  - Administer influenza antivirals
- Tobacco Cessation and Strong Vaccination Recommendations
  - Flu, pneumococcal
- CDC is offering testing of vaping products with FDA
  - incidentresponse@cdc.gov

YOU could be the KEY!

Outreach/Education

- Discussing with all your patients, regardless of age
- Provide in-service education to other dental offices
- Provide in-service education to other medical professionals
- Develop relationships with public health entities
- Speak to students, athletes, youth
  - Wherever you can: schools, churches, sports, after school programs
Resources

- Association of State and Territorial Health Officials (ASTDHO)
- CDC Office on Smoking and Health (OSH)
- Clinical Outreach and Clinical Activity (COCA) Webinar: presentation in PowerPoint and PDF
- Display posters in clinical settings
- CDC resources
- Surgeon General Report
- Substance Abuse and Mental Health Services Administration
- Smokefree.gov

Resources

- Colorado resource: https://colorado.gov/pacific/cssrc/vaping-and-e-cigarettes

FOR HEALTHCARE PROFESSIONALS, CDC  October 24, 2019

https://www.colorado.gov/pacific/cdphe/vaping-lung-illness
1-800-222-1222 Colorado

Pneumonia Like Illness

- Oil deposits coat lungs
- Do not allow lung tissue to function anymore
- Creates irritation and cell death
- Leads to lung failure
- Linked to ingredients in liquids (pods)
  - Marijuana oils (cannabis)
  - Vitamin E acetate
  - Toxic by products from heating chemicals(6)
- Lipoid pneumonia
- Respiratory failure
E-Liquids

Vitamin E Oil
Cutting agent

MISC
Pesticides, additives, cheap equipment, parts, contaminated

THC
Marijuana

Hydrogen Cyanide
Myclobutanil before burned
Turns to gas after burned

Vitamin E Oil
Cutting agent

Have you seen a JUUL?
POLL

New Vaping Trends
“JUULing”
Why, where and how

Resources
Parents, Clinicians, Adults and Young Adults

Knowledge is Power
Oral and overall health risks

Today’s Agenda

The Problem
Overview and Recap
Traditional Cigarettes, E-Cigarettes, Vaping

Questions/comments
lancettevg@gmail.com
Traditional Cigarette Smoking is still the leading cause of preventable deaths in the US:

- 38 million
- 440,000 deaths per year
- 1 person every 5 seconds

Traditional Cigarette Smoking Still on the Decline - 14% all time low!

Public Health/Prevention Efforts 1970s - today

1. Media
   - Banned ads - 70s
2. Science/Research
3. Tobacco Legislation
   - Flavors banned 2009
   - Raising age to 21
4. Tobacco Settlement
   - Scholarships
   - Public education
   - By age 18
5. Education
6. Social Stigma
7. Cost
   - Taxes, $

Do you think vaping is less harmful than smoking?
POLL

E-cigarettes are harmful to developing brains: adolescent and young adults

Fastest way for nicotine to get to brain, more potent when mixed with other chemicals. Intelligence, language and memory. Causes permanent brain damage.

Center for Disease Control

- Warning Issued September 6, 2019
- Americans should not use any e-cigarettes
  - Diversity of products
  - Recent deaths and hospitalizations

TOBACCO USE

Increase in e-cigarette use by high school students from 2011 to 2015

17-year olds who think that e-cigarettes are less harmful than smoking

Vape Culture

https://www.cdc.gov/tobacco.htm

And the National Youth Tobacco Survey, CDC

2013 2%
2013-2014 6%
2015 16%
2017 28%
2018 37%
History of Electronic Cigarettes

- 1930’s: 1st patent, never made
- 1960's: 1st prototype only
- 1980's: 1st commercial product, failed, term VAPE emerged
- 1990's: 1st nicotine inhalers, failed 1998, FDA denied as safe drug delivery device—murky details
- 2003-2008: 1st device as used today. Chinese pharmacist, smoker and inventor. Designed to be “smoke-like”, dad died of lung cancer
- 2008-present, many countries have banned and imposed prison and large fines. Many legal battles in US: FDA, corporations, coalition’s and states.
- Banned: Turkey (2008), Australia (2009), Jordan (09), Hong Kong (09), Saudi Arabia (09), Singapore (10), Brazil (09), Canada (09) and Venezuela (12), Argentina, Egypt and India.
- Banned from US airplanes in 2011
- Obama singed in to law child resistant packaging in 2016

E-Cigarettes

ELECTRONIC NICOTENE DELIVERARY SYSTEMS (ENDS)

Electronic cigarettes/ Vaporizer pen

- smokeless, battery operated device used to deliver nicotine with flavorings or other chemicals to the lungs.
- ranging in size from a standard pen to a large cigar
- Used to generate an inhalable vapor from a solid, semi-solid, or liquid substance. (VAPE)

What is VAPING?

Inhale liquid vapor

Through an electric cigarette or personal vaporizer

Using a liquid solution containing their drug of choice into the device.

When inhale on the device, the battery heats the liquid, which is then atomized into an inhalable aerosol.
### Vaping Parts and Pieces
- Battery
- Atomizer
- Mouthpiece
- Cartridge/pod/tank/plug
- Indicator light
- Heating element

### Multi Packs
- 4 in 1
- Atomizers: Oils Wax Dry Herbs E-liquids

### Ingredients in e-liquids
1. **Vegetable Glycerin**
   - Made from vegetable oil, such as coconut oil
   - Heated to high temperatures
2. **Propylene Glycol**
   - Used to dilute thickness
   - Sweet taste
   - Commonly added to foods for taste, such as ice cream
   - Used in toothpastes, cosmetics
   - Helps as a carrier to deliver nicotine and flavorings
   - Helps give throat hit similar to cigarettes
3. **Flavorings**
   - Natural, Artificial or combination
4. **Nicotine**
   - Highly addictive, from tobacco leaves
   - Various strengths
   - Optional majority contain
5. **Other compounds/chemicals**
   - Diacetyl (flavoring) and benzoic acid (lowers pH=smoother vape)
   - Byproducts are created from heat
   - Unknown ingredients in many e-juices

### Is there SUGAR in e-liquids?
- www.ncbi.nih.gov
- 22-53%
- Glucose, sucrose, fructose
- *Increased insulin resistance in Type 2 diabetics*

### E-Liquid/E-Juice
- The FDA generally views both PG and VG as safe in food, drugs and cosmetics
- BUT there have not been sufficient scientific studies done on what the impact of inhaling them on a short or long term basis may be
- Heating chemicals produces byproducts

### Flavorings
- Bubble gum, Pina colada, peppermint, chocolate, cool cucumber, mango, coffee, fruit, candy, tobacco, crème Brule, strawberry milk

*Ingredients that have been approved as safe for injection (GRAS)
BUT...have not been evaluated for inhalation and heat*
E Liquid Dangers

POISON!
• 2014 nearly 4,000 exposures reported to poison centers
  – 4X higher than in 2013
• Can contaminate skin, leak
  – Vomiting
  – Sweating, dizziness
  – Increased heart rate
  – Seizures, lethargy, difficulty breathing

Allergies/Irritants
• Allergies to PG and VG are rare
• May irritate the lungs and eyes
  – More harmful to people with chronic lung diseases like asthma and emphysema

What the JUUL?
• Newest and most popular vaping device is JUUL
• Small sleek device charges in computer
• Looks like a USB Flash Drive
• 72% of the vaping market
• Enticing Flavors
  - High dose nicotine delivery system
• Easy access

The term “JUULing”

Juul
• Type of electronic cigarettes
• Sleek
• Compact
• Fun flavors
• Easy to hide
• Look like everyday items, USB chargers/drives, pens, markers, flashlights
• Sweet or floral smell, none

• E-liquids in cartridges, or pods, contain a base (propylene glycol) mixed with nicotine and flavorings and other chemicals
• Most popular tobacco product of teens
• May reverse the long standing US decline in smoking

JUULing has become a verb

Juuling is growing, while teen use is under investigation

<table>
<thead>
<tr>
<th>Share of teenagers that began smoking cigarettes</th>
<th>Percent change year over year for revenue for different e-cigarette brands, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cig Cans</td>
<td>PHIX</td>
</tr>
<tr>
<td>Juul</td>
<td>36.2%</td>
</tr>
<tr>
<td>V2</td>
<td>26.1%</td>
</tr>
<tr>
<td>Logic</td>
<td>7.9%</td>
</tr>
<tr>
<td>Blu</td>
<td>3.5%</td>
</tr>
<tr>
<td>Kandy Pens</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Teens may not call them e-cigarettes:

- Cartridges
- Carts
- Water pipe
- Vape pipe/pen

“Juul”

74% Physical retail location
52% Social source
6% Internet

Youth who used JUUL flavor pods in the past 30 days said they obtained the device in the following ways.

*Youth could select multiple answers

truthinitiative.org
“SMART” devices- Bluetooth

Note: Some e-cigs connect to other electronic devices to play music and answer calls

What the JUUL?

• “Juuling”: The most Widespread Phenomenon You May Have Never Heard of”
  — The Boston Globe, November 2018

• Discreet form of vaping that is the more socially acceptable
• Students in middle and high school may do it
  — movie theaters, restaurants, bathroom, in class or at home with no one knowing

2015-JUUL

• JUUL was introduced in 2015 as a spinoff of PAX labs
• Help assist current tobacco users to quit or to be able to smoke safer

TODAY: Most of users are young adults or adolescents
— High school and middle school students
— enjoy the flavors, its shape, ease of use, less stigma

Schools warning about e-cigarette use

Specifically a brand called Juul

• Products that look like pens or highlighters can easily be hidden
  by students in schools and classrooms
• Teachers may not recognize e-cigs, and smoke detectors won’t catch the aerosol
• There may be no odor or little vapor cloud

• Sleek devices, often concealed

63% OF JUUL USERS DON’T KNOW THAT THE PRODUCT ALWAYS CONTAINS NICOTINE.

truth initiative

www.truthinitiative.org
What makes JUUL different?

- JUUL starter packs use nicotine salts instead of free based nicotine e-juice liquids
- Youth like to trade flavors back and forth
- JUUL has higher nicotine concentrate than other e-cigarettes and may be more addictive
- Nicotine concentration in each JUUL pod is about 2 times that of other ENDS
  - 5% nicotine weight (JUUL) vs 2.5% (other e-liquids)

Nicotine receptors: neurotoxin
- all organs in the body
- damages blood vessels
- reduces ability to recover from stress
- lead to more anxiety and hyperactivity

The Appeal
- Sleek, Compact
- USB Charged
- Easy access
- Flavorings: Cucumber, Mint, Mango, Tobacco, Chocolate, Strawberry milk
- Marketing: Names, images, Out-of-warnings contents nicotine, generalized
What is happening and Why Now?

- Been around long enough
- New devices, new liquids

https://www.soyoutube.com/watch?v=ZykW6j46Y
CONCERNS

- Studies show that 63% of users (15-24) don't know product contains nicotine
- Does not resemble traditional e-cigarettes
- Not just an e-cigarette in a different package
  - but it contains a different type of nicotine
  - A whole new generation addicted to nicotine

Nicotine Salts

- Nic salt, salt nic, salt nic juice
- Found in the leaves of tobacco plant
- Used in place of freebase nicotine to deliver a smoother nicotine hit when vaping
- Complex compounds, salt-based nicotine, less harsh to vape and allows for a better tolerance of higher nic salt levels.

Nicotine Salts

- Add benzoic acid to nic salts
  - to vaporize at lower temperature
  - Improve taste
  - Lower the pH levels in salts = smoother, more impactful hit
- Absorb easier
- Used in smaller, lower wattage devices such as surin air, aspire, breeze, ghostick, JUUL

Elevated Vaping

- JUUL delivers a hit of nicotine like a cigarette
  - "Nicotine punch"
- Elevated Vaping = using SMOOTH nicotine salts
  - Feel better to the mouth
  - More like a cigarette rush
  - Can use higher nicotine amounts

Is Nicotine All Bad?

Nicotine: The Good, the Bad and the Ugly
- Patch - slow delivery
- Gum slightly faster
- Smoking - very fast
- 40 years of research
- Divide: political, emotional, scientific: Is there safe nicotine?

https://www.scientificamerican.com/article/is-nicotine-all-bad
NICOTINE

- **Stimulant:** Raises heart rate, increase sensory information processing, sharpens the mind and eases tension
- **Negative effects for younger adults:** Gateway drug, brain development, addiction to nicotine, lead to cigarette smoking
- **Possible positive effects for older adults:** Delaying Parkinson’s, improve cognitive and motor aspects of Parkinson’s, warding off cognitive decline in Alzheimer’s, easing ADHD symptoms

https://www.scientificamerican.com/article/is-nicotine-all-bad/

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**Are e-cigarettes a very successful smoking cessation tool?**

**POLL**

Not the best smoking cessation tool

- Lawsuits from NY to Cali. Claiming JUUL deceptively marketed as safer than cigarettes and a viable method to quit smoking/ targeting today’s youth
- What research shows
  - No good quality evidence based to show they help cigarette smokers stop smoking combustible cigarettes
  - May even increase use, and lead to dual use

Dual Use

National Institute on Drug Abuse

31%

Teen e-cigarettes are more likely to start smoking traditional cigarettes within 6 months

8%

Nonusers who took up smoking

Vaping as a tobacco cessation aide?

- Conflicting research
- Still need more long term research
- Some evidence suggest successful for short term cessation, 3 months
- Some evidence suggests not effective for long term, 1 year
- Treating addictions is difficult, using a different method to achieve the same thing may not be effective.
- **10% of smokers quit smoking after 1 year using vaping devices**
- **60% become dual users**
Electronic cigarettes have been successful to help quit traditional smoking.

Tobacco Cessation Tools
- Nicotine
  - Transdermal Nicotine Patches (23%)
  - Gum and Lozenges (27%)
- Non Nicotine
  - Bupropion Hydrochloride (Non Nicotine) (16%)
  - Varenicline tartate (Chantix) (23%)

After 1 year

Second hand vapor
- Vapor exhaled contains known carcinogens
- Experts agree it is as dangerous as second hand smoke from cigarettes to youth and young adults
- Even if no nicotine, other chemicals are still present
- Heating chemicals and ingesting them into the body may lead to inflammation, cell damage and overproduction of free radicals
  - Free radicals are associated with cell damage and cancer
  - Still less toxins than cigarette smoke
  - As dangerous as high levels of pollution for all ages

Not Water Vapor - Yes it is an AEROSOL

IT IS NOT A HARMLESS VAPOR

TOXIC CHEMICALS ARE FORMED AS THE E-LIQUID HEATS UP

AEROSOL COMPOSITION

- Benzo(a)pyrene
- Carcinogens
- Formaldehyde
- Nicotine
- Nitrosamines
- Tobacco-specific
- Volatiles

Gases, solvents, metal particles, toxins
Second hand danger from Vaping Vapor

- US Surgeon General
  "MAJOR health risk"
  - Among youth and young adults
- Second hand aerosols from vaping devices contain
  - Toxic ingredients
  - Nicotine
  - Heavy metals
  - Fine particles
  - Can harm lungs


Cloud Chasing

- LACK OF KNOWLEDGE
  - 40% of adults say second hand vapor causes little to no harm

Cloud Competitions
- Big Clouds
- No Clouds
- Devices, oils, inhalation technique, temperature, power of device

Rings, Dragons and Ghosts

- I DON'T BLOW SMOKE I BLOW CLOUDS

Stealth Vaping

- Public Opinion
- Subtle, discreet
- Reduce 2nd hand vapor
- Reduce temptation for non-users
- Respectful
- Minimize setting off smoke alarms

Stealth Vaping

- Covert Vaping Techniques
  - Equipment
  - E-Juice
  - Inhalation styles
    - Deep inhale
    - Second inhale
    - Swallow
    - Shirt Blow
    - Napkin Blow

- Devices that may look like lip balm to blow vapor in to
- Clean Flavors
- Tweak Juice
  - DIY
  - Add 10% distilled water dangerous technique

What else can be vaped?
American Academy of Family Physicians

- November 2018
- Experts warn

“E-cigarettes are gateway to harder drug use.”

Essential Oils

Vitamin Vaping-B12

Alcohol: rapid delivery to brain

“Vaportini”

Hiding Marijuana in JUUL pods

Lower temps-no burn
Dabbing: convert marijuana to concentrate-high THC

Uses BUTANE: highly flammable

Honey oil, crumble, shatter, wax, hash oil

80%

Hookah: smoke flavored tobacco after it passes through water

Smoke inhaled in a typical one-hour hookah session can equal 100 cigarettes or more (WHO 2011)

Dripping: apply drops of liquid directly on coils

Dangerous

Highly heated chemicals=more toxic

More rapid delivery into body-higher risk of poison

Journal of Pediatrics

Vaping Caffeine

• Vapes.com
• Monster e-juice
  – Demon Energy
• Tastes just like Monster (energy) drinks
• Difficult to measure dosage
• 10-20 puffs=1-2 cups of coffee-rapid delivery


How do youth get devices and how much do they cost?

• Starter Pack $49.99
• Device, charger and 4 pods
• Pods
  – $9.99/2
  – $15.99/4
• Coupons
• Some try to save money and refill pods “DIY” e-juice, YouTube videos
• Many people share devices- cross contamination
**Overall Health Concerns**

- **Side Effects**
  - Increased heart rate
  - Increased blood pressure
  - Increased insulin resistance in Type 2 diabetics
  - Increased risk of chronic bronchitis
  - Increased risk of lung diseases

[https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping](https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping)

**Coronary Heart Disease**

E-cigarette users
- 34% more likely to have heart disease than non-users
- American College of Cardiology

**POPCORN LUNG** (bronchiolitis obliterans)

*Diacetyl*

[https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping](https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping)

**Coronary Heart Disease**

- Damages from malfunction: fires/burns
- Addiction, Gateway drugs
  - Lead to traditional cigarette use
- Negative impact on adolescent, young adult brain development
- Increased risk of Cardiovascular disease
- Increased risk of Cancer
- Respiratory
  - Popcorn Lung, COPD, Chronic bronchitis

[https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping](https://news.psu.edu/story/527326/2018/07/03/impact/medical-minute-hazards-juuling-or-vaping)

**Depression**

- Restlessness
- Irritability
- Loss of interest in normal activities
- Thoughts of suicide or death
- Tiredness
- Disturbance in sleep or appetite

**Anxiety**

- Increased heart rate
- Sweating
- Feeling nervous or powerless
- Excessive worrying
- Having a sense of impending danger or panic

AAOSH April 2019

**Vaping and Oral Health**
Is vaping worse than cigarettes?

**Oral Health Concerns**

- **Nicotine is a vasoconstrictor**
  - Increased periodontal risk associated with less nutrient dense and oxygenated blood flow to gums
  - Reduced white blood cells to fight off infection
  - High risk periodontal pathogens, like P. Gingivalis, thrive in deoxygenated environment
  - High risk for dry mouth
- **Nicotine is a stimulant**
  - Increased bruxism

https://www.deltadentalwa.com/blog/entry/2018/06/ecigarettes-vaping-dental-health

Serious Oral Health Concerns

- **Propylene glycol**
  - Breaks down to acid: damage enamel
  - Water in mouth binds to molecules: dry mouth
- **Vegetable glycerin and flavorings**
  - Sweetener, does not cause cavities, allows microbial adhesion/increase in biofilm/strep in pits/fissures
- **Nicotine: decreases connective tissue turnover**
  - Increased bone and tooth loss

https://www.perioimplantadvisory.com/articles/2019/01/vaping-and-oral-health-its-worse-than-you-think.html?cmpid=enl_perioimplant_advisory_2019-01-10&pwhid=8e2a80671433044d9f2d417e18285a6c017c163d483c0ce16dbfbdbc35e86eac0d47c89b6b7e7ab8d101d4db01a109dde7270311d8608215df9b5f575ee7f0bd

**Dentistry IQ**

August 2018

Univ of Minn

Vaping increases levels of DNA damaging chemicals, such as formaldehyde, in saliva and is linked to increased risk of oral cancer

**Warning Signs**

- **New Drives**
  - New pens, markers, highlighters, flash drives, novels
- **Diet/habit change**
  - Increased water intake
  - Sensitivity to caffeine
- **Physical symptoms**
  - Dehydration: nose bleeds, change in personality, dry mouth, withdrawal
  - Containers of flavor: sweet, floral, fruity, kid like
  - New smells
  - Dry mouth, increased salivary flow
  - New habits
  - Parts and pieces
  - Obvious containers of flavor, liquid pods, juice, amazon account
What Can You Do?

- Ask patients not just about smoking or chewing, but also about vaping and whether or not they may vape or Juul. Be more specific with questions.
- Use the same terminology that they are using.
- Educate other healthcare providers, your dental team and all patients, children and parents about the dangers. Parents, teens - health/safety.
- Offer tobacco cessation resources/options.

Resources for the Dental Professional

- Fact sheets
  - Parents
  - Youth
  - Clinicians
- Toolkits
- Videos
- Webinars
- PowerPoint presentations

Resources for the Dental Professional

- https://www.tobaccofreekids.org
- https://truthinitiative.org
- https://www.aap.org
- https://www.oralhealthgroup.com
- https://smokefree.gov/quit
- https://www.cdc.gov/tobacco/quit_smoking/how_to_quit/resources/index.htm
- SAMHSA’s National Helpline, 1-800-662-HELP
- Killthecan.org (smokeless tobacco) facebook

Laws and Regulations

- 2007
- 2009 Federal Law banned the use of flavorings in cigarettes, except menthol
- Electronic cigarettes have been largely unregulated
- FDA was slow to implement regulation

- 2016
- FDA - more aggressive approach and apologies
- August 2019 - Michigan

5 Truths About Vaping

- Vaping is Slightly Less Harmful Than Traditional Smoking*
- Electronic cigarettes are not the best smoking cessation tool
- A new generation is getting hooked on nicotine

New report one of the most comprehensive studies on health effects of e-cigarettes

- Jan 2018
- 800 peer-reviewed scientific studies
Evidence to Support

- Nicotine exposure (similar to traditional cigarettes)
- Exposure to other toxic chemicals is harmful (less than traditional cigarettes)
- Dependence and abuse
- May lead to youth smoking traditional cigarettes
- Second hand exposure is still harmful
- Increased risk of injuries and poisonings
- Drinking or injecting e-liquids can be fatal
- Moderate evidence: wheezing, coughing, asthma flare ups
- Early research shows biomarkers that may increase cancer risk

No Evidence to Support

- Adverse pregnancy outcomes
- Insufficient evidence = fetal development
- Direct cause of respiratory disease
- No available evidence - direct cause of cancer

Why Now?

Conclusions

- More long term research is still needed with vaping and electronic cigarette use.
- Many individuals are unaware of the chemicals and ingredients in e-liquids and danger with second hand vapor.
- Nicotine levels may be very high in e-liquids and lead to oral and overall health concerns.
- More education and knowledge can be shared among dental professionals to ensure that patients are getting the most up to date information.
- Resources can be utilized in local communities, social media and dental offices – we can play an active role in education and awareness.
- Offer smoking cessation resources to all patients.
- Educate students at local schools on dangers of vaping

References/Additional Resources

- https://www.youtube.com/watch?v=6mQUIMFNzrw
- https://www.bostonglobe.com/metro/2017/11/15/where-teenagers-are-high-school-bathrooms-vaping/16xYWXlOTkUqU4GTFwEU0/story.html
References/Additional Resources

- www.dashvapes.com/juul
- https://www.rdhmag.com/articles/print/volume-38/issue-7/content/is-your-patient-juuling.html
- https://www.sotertechnologies.com/novaping#novaping package
- https://med.stanford.edu/tobaccopreventiontoolkit/E-Cigs/ECigUnit6.html

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- https://www.centeronaddiction.org/e-cigarettes/recreational-vaping/what-vaping
- https://med.stanford.edu/tobaccopreventiontoolkit.html