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Board Certified

- Internal Medicine
- Pulmonary Medicine
- Sleep Medicine

Ingredients Found E-Cigarettes

A national survey showed 80% of youth believe e-cigarette vapor causes little or no harm.



In The Vapor

Nicotine

Problem #1: Addiction

- Nicotine is a DRUG.
- Nicotine is more addicting than heroin or cocaine.
- The adolescent brain is more sensitive to nicotine than adult brain, and becomes dependent faster than an adult brain.
- Nicotine use as little as 1-3 days/month and can become addicted.

In The Vapor

Nicotine

Problem #2: Atherosclerosis/Heart Disease

- Premature death due to heart attack and stroke.

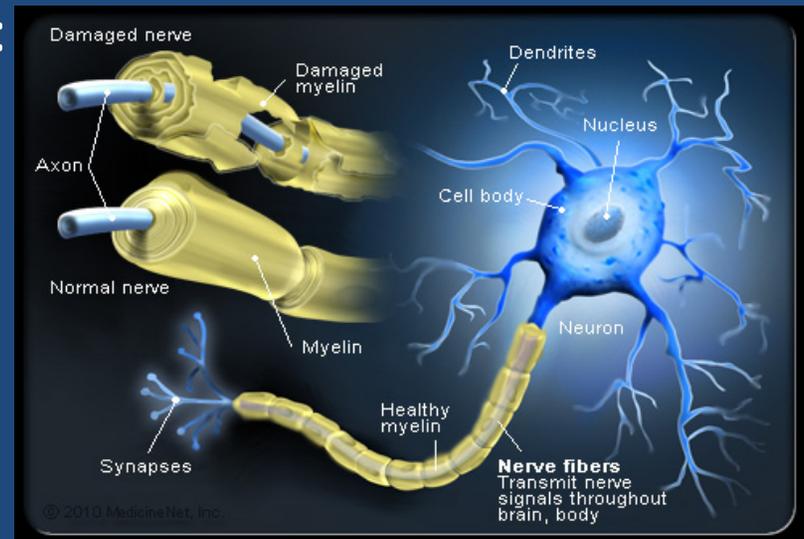


In The Vapor

Nicotine

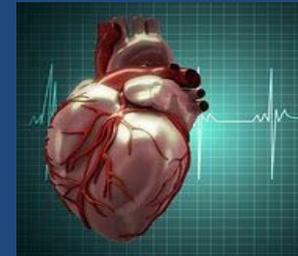
Problem #3: Brain Damage

- Nicotine interferes with myelinization in the developing brain.
- Myelin is the “insulation” around nerve cells that allows nerve cells to transmit information faster.
- Myelinization in the frontal lobes:
 - Reasoning
 - Decision Making
 - Self Discipline
 - Problem Solving
 - Control Emotions



With nicotine we have:

1. Addiction
2. Heart Damage
3. Brain Damage



In The Vapor

Flavors

- Flavors make the e-cigarette taste good
- There are more than 15,500 flavors on the market
- Youth like the sweet and candy flavors
- However these flavors were made to eat, not to be inhaled into the lung



In The Vapor

Flavors

- Inhaled flavors can cause lung damage
- Ex: Diacetyl (DA) – buttery taste
- DA – Ok to eat, but not inhale
- Inhaled DA causes a deadly lung disease called *Bronchiolitis obliterans* “Popcorn Lung”
- Also, vape package may say it is not there when it is there, ie., No FDA oversight here.

In The Vapor

Cancer Causing Agents (known human carcinogens)

- Ex: Tobacco Specific Nitrosamines (TSNAs)
 - When nicotine is extracted from tobacco leaves, TSNAs are in the liquid.
 - TSNAs are human cancer causing agents.
 - Cancers – brain, stomach, bladder, head/neck, and esophagus
- Ex: Formaldehyde (known human carcinogen)
 - When propylene glycol and glycerin are heated formaldehyde is produced.
 - Cancers – head/neck and acute leukemia

Conclusions: Things To Think About

1. Vapor is harmful.
2. Vapor causes damage (brain, heart, lung).
3. Vapor could cause cancer.
4. Vapor causes nicotine and increases risk of transitioning to conventional cigarettes.

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Other Health Effects of E-Cigarettes

E-cigarettes and Seizures

- 35 cases of seizures following the use of e-cigarettes.
- Some cases were first-time e-cigarette users and some were experienced users.
- Cause: High levels of nicotine delivered to the brain.

FDA ALERT April 3, 2019

Heart Disease

E-cigarette solvents propylene glycol and glycerin cause effects on the heart which can precipitate sudden death and heart failure.

Abstract Circulation Nov. 2018

E-cigarettes and oral health: It's worse than you think



E-cigarette explodes in teenager's mouth, breaks jaw, knocks out teeth

