

# Vaping and Drug Use Disorders

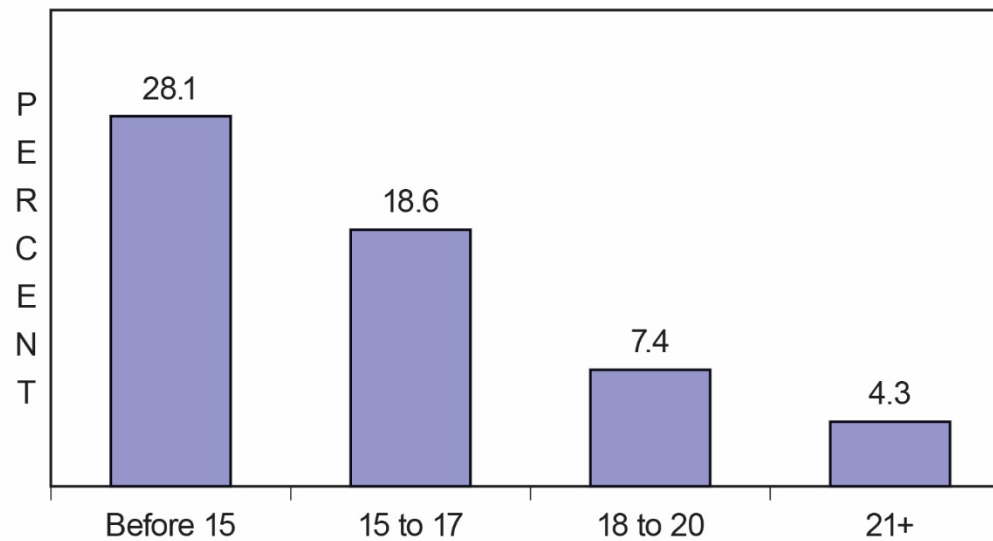
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Licking Memorial Addiction Medicine

Shepherd Hill



## Substance Use Disorders Among Persons 12 and Older by Age of First Use



CASAColumbia (2011). Adolescent Substance Use: America's #1 Public Health Problem. (p39) CASAColumbia analysis of National Survey on Drug Use and Health, 2009. New York.



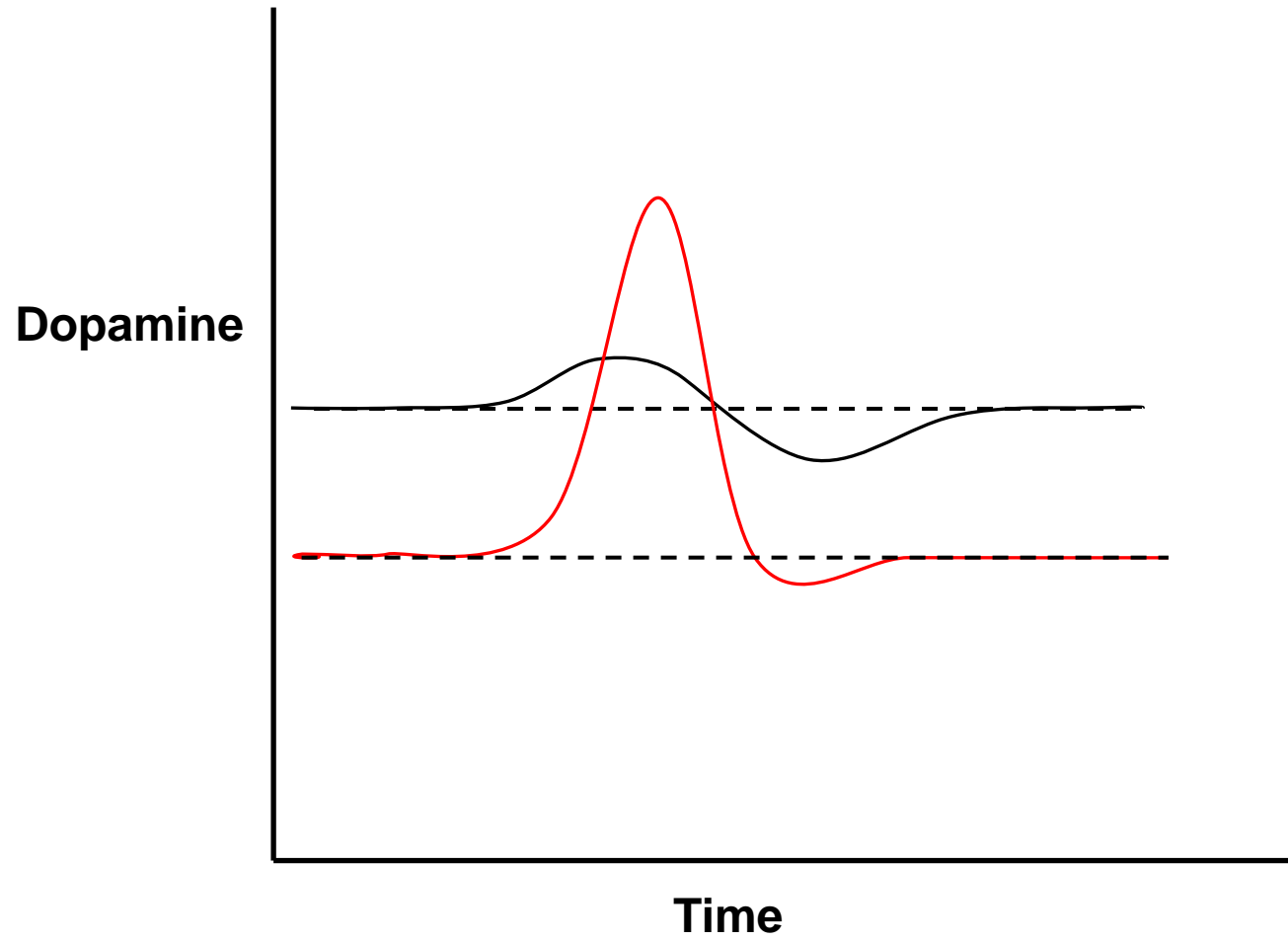
# Definition of Terms

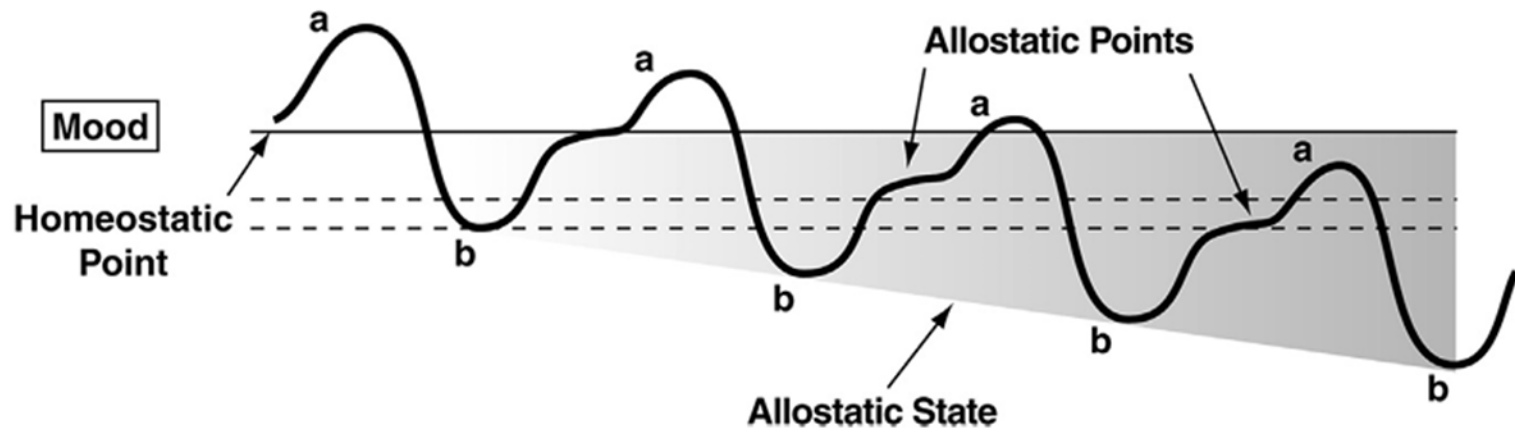
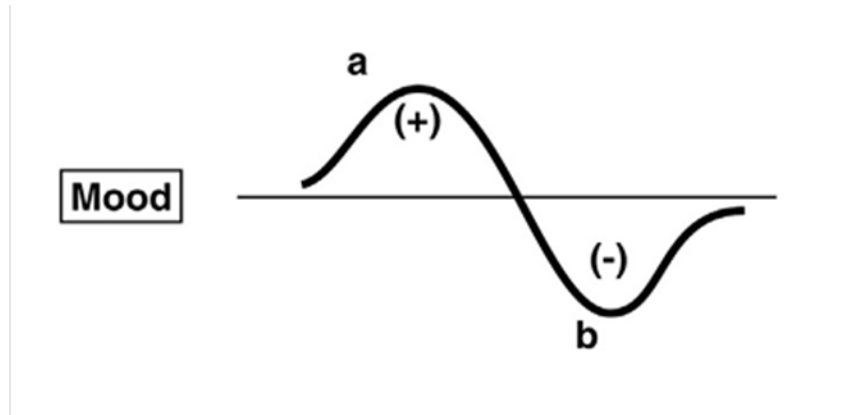
## **Addiction (Substance Use Disorder)**

Addiction is a primary, chronic, neurobiological disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following:

- 1. Impaired control over drug use**
- 2. Compulsive use**
- 3. Continued use despite harm**
- 4. Cravings**







# **Substance Use Disorders**

## **A Brain Disease**

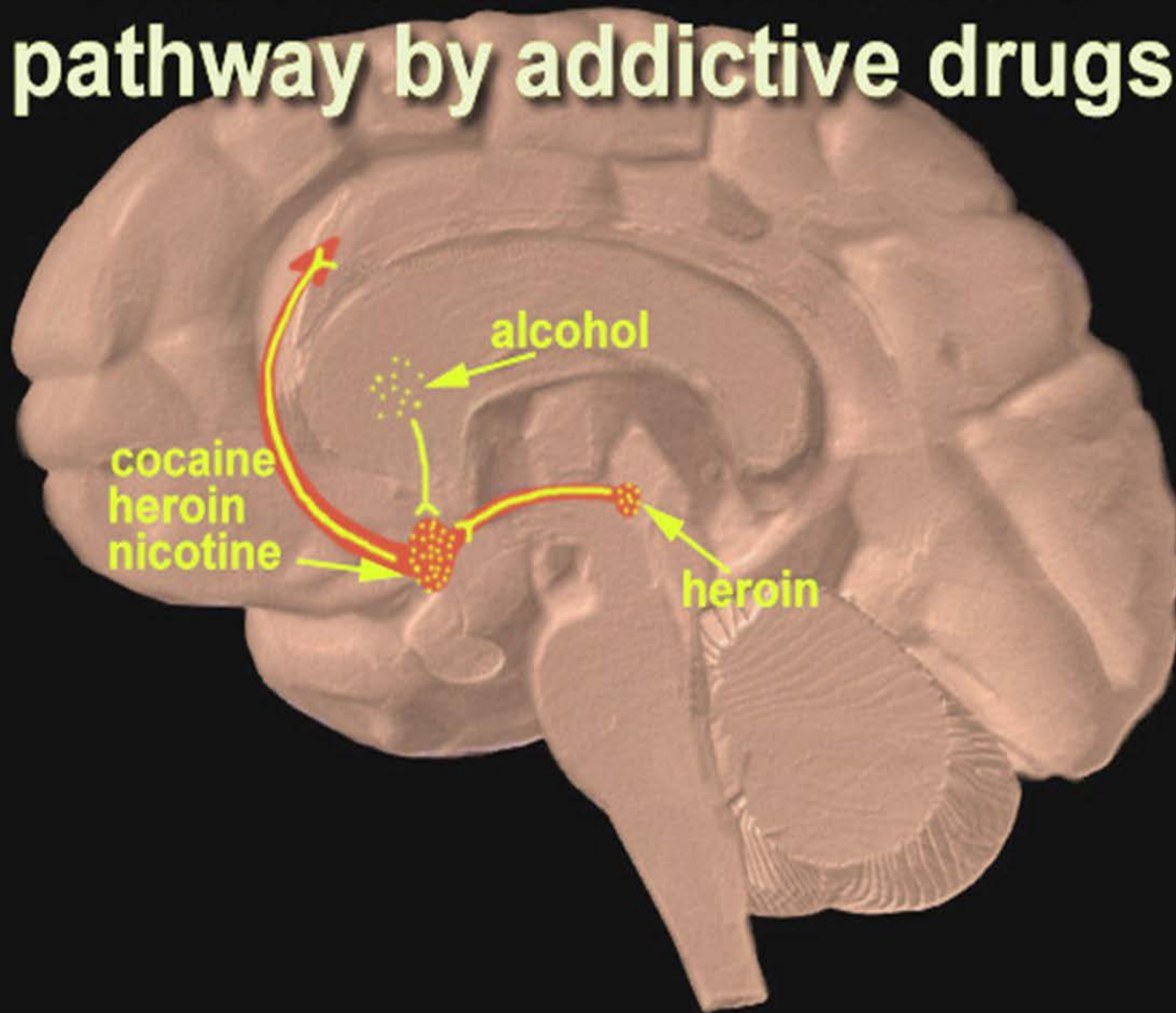


# Recognized as a Disease

- Dr. Benjamin Rush – **1784**  
*“Habitual use of ardent spirits, an odious disease.”*
- American Medical Association (AMA) – **1956**
- United States Department of Health & Human Services
- American Psychiatric Association (APA)
- World Health Organization (WHO)
- The American Society of Addiction Medicine (ASAM)
- Insurance Companies
- **Licking Memorial Health Systems**

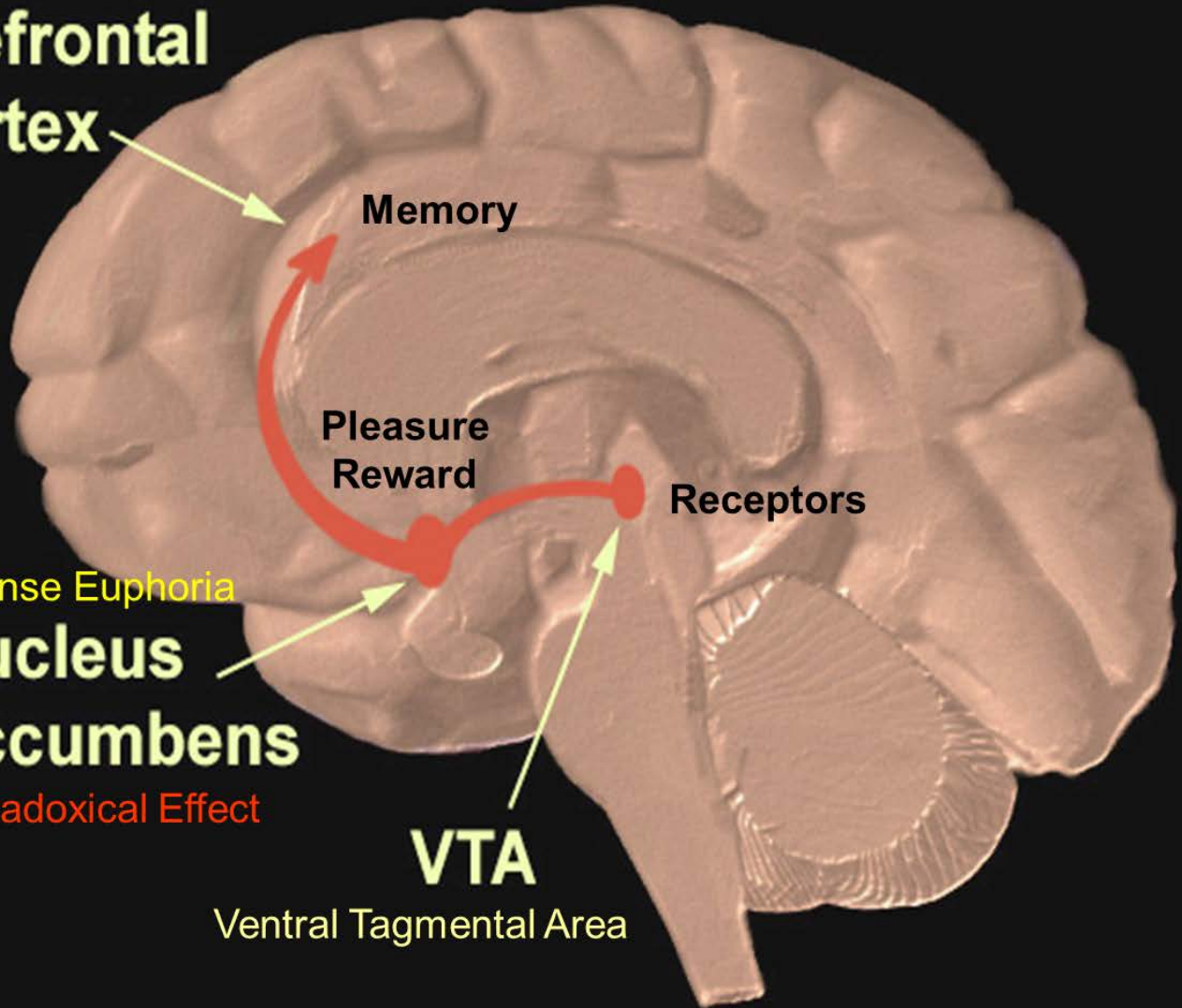


# Activation of the reward pathway by addictive drugs





**prefrontal cortex**



**Memory**

**Pleasure  
Reward**

**Receptors**

**Intense Euphoria**

**nucleus  
accumbens**

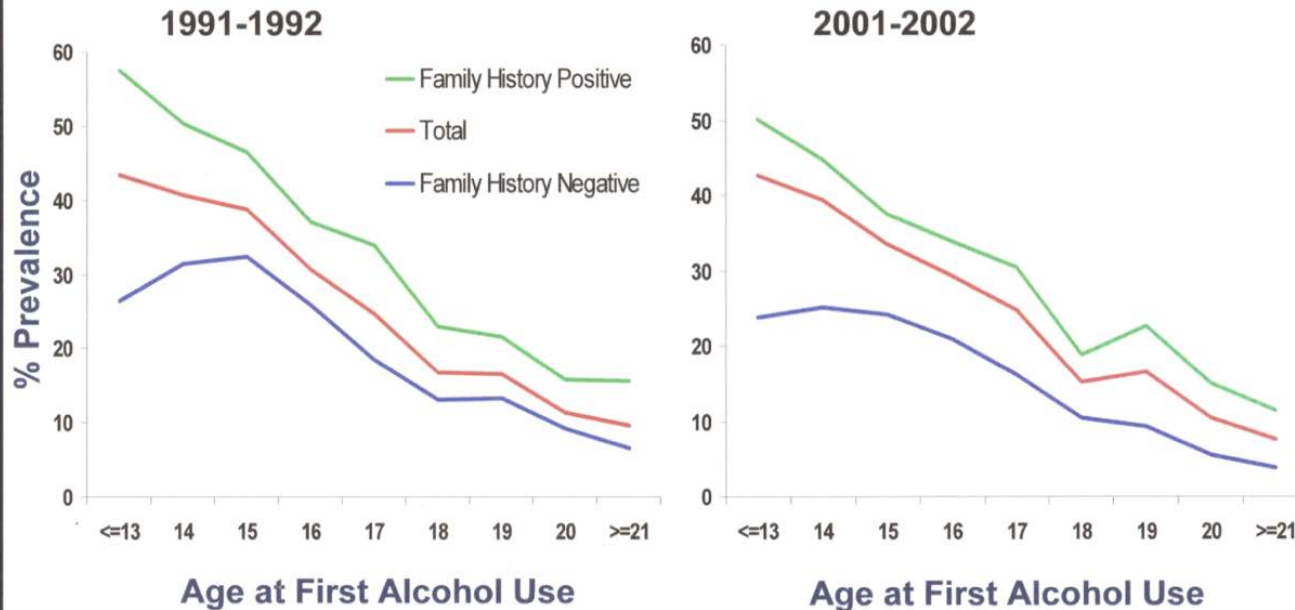
**Paradoxical Effect**

**VTA**

**Ventral Tagmental Area**



# Prevalence of Lifetime Alcohol Dependence by Age of First Alcohol Use



Source: Grant and Dawson. *J Subst Abuse*. 1998. 10(2):163-73.

Source: 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions



# **Substance Use Disorders**

## **Stigma and Ignorance**



# Stigma and Ignorance

- Stigma and ignorance are the major barriers to obtaining effective treatment.
- Stigma and ignorance labels the ill as shameful, evil, stupid, condemned, weak-willed, and almost like non-people.
- Stigmatizing this disease decreases access to care, which results in more risk to the person and to the community.
- Past examples include epilepsy, leprosy, cancer, tuberculosis, schizophrenia, and AIDS.

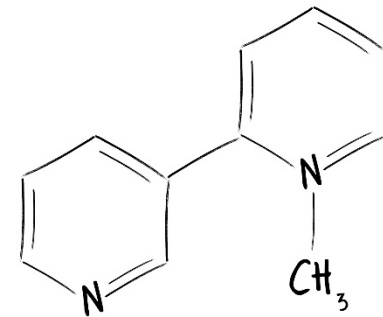


# Cigarette Smoking



# Cigarette Smoking

- In the brain, nicotine increases the release of brain chemicals called neurotransmitters, which help regulate mood and behavior.
- Nicotine reaches the brain within seconds of taking your first puff.
- Nicotine has been proven to be as addictive as cocaine and heroin.



NICOTINE



# Cigarette Smoking

- Current smoking has **declined** from 20.9% (nearly 21 of every 100 adults) in 2005 to 12.5% (**nearly 13 of every 100 adults**) in 2020.
- 480,000 people still die from cigarette smoking each year in the United States.
- **Smoking in 12- to 17-year olds is rising.**



# What Is Vaping?

Vaping simulates smoking. Vape devices create an aerosol that looks like water vapor; however, it contains nicotine, flavoring, and more than **30** other chemicals. The aerosol is inhaled into the lungs where the nicotine and chemicals enter the bloodstream.

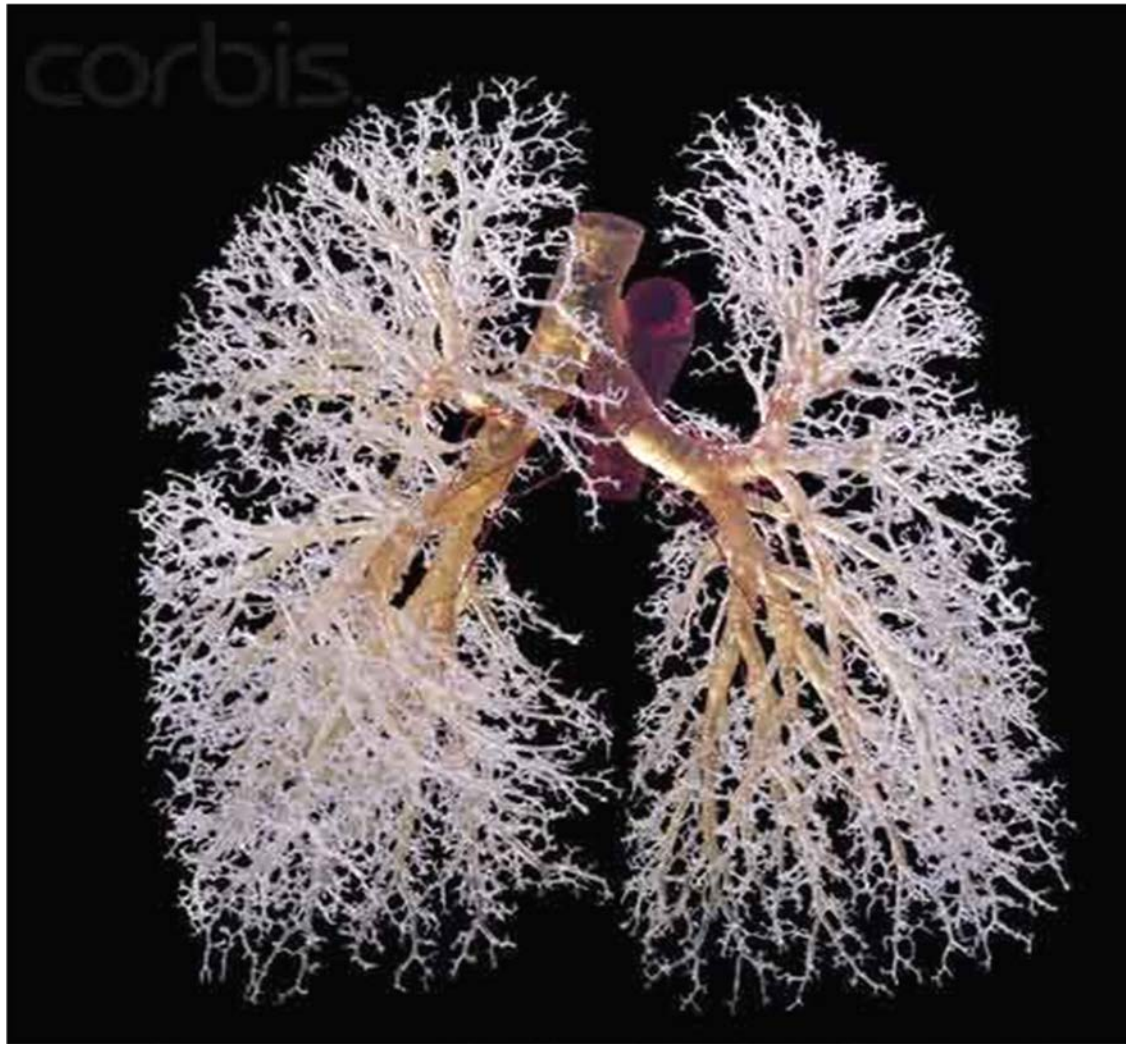




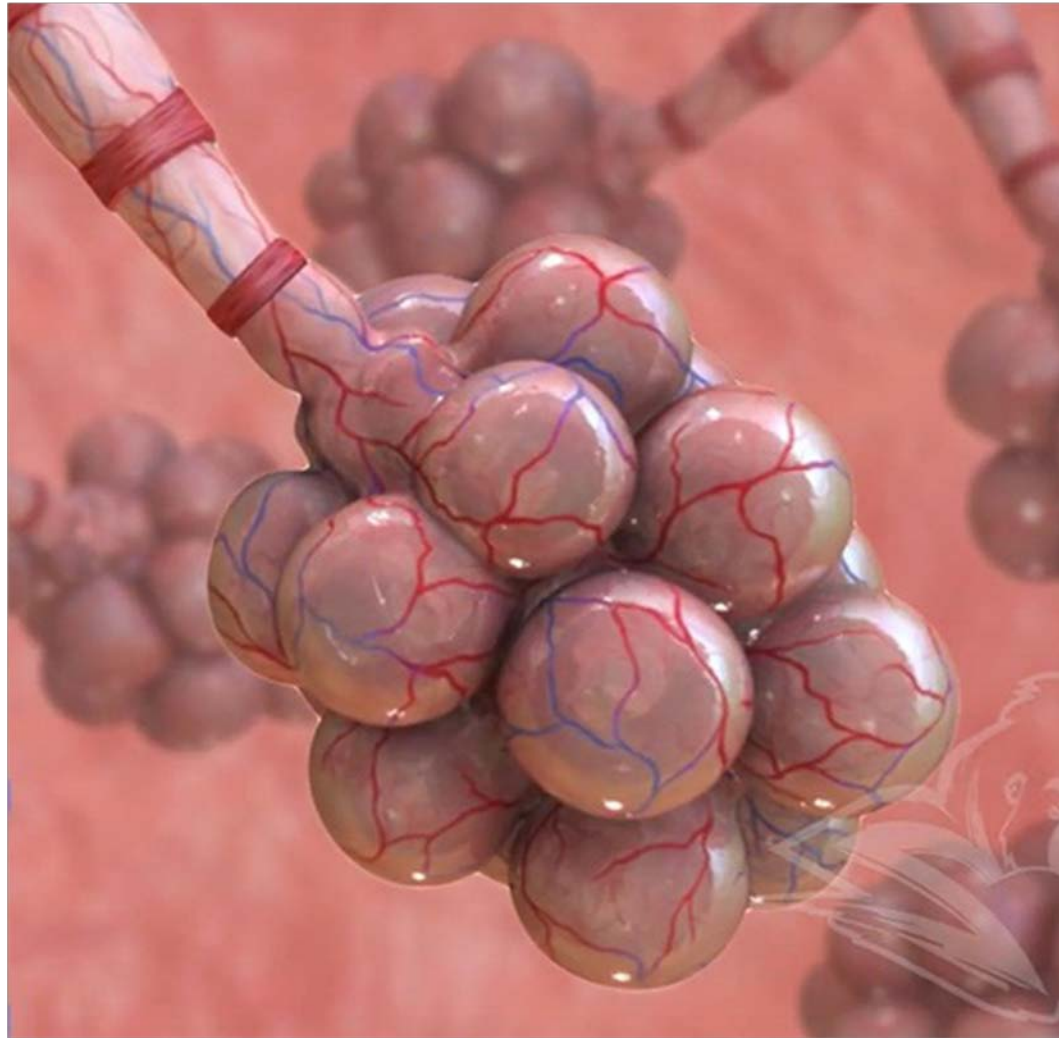
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The vaping industry is mostly unregulated. The vape liquids currently on the market contain hundreds of different chemicals, making it impossible for people to know whether the liquids they are using are safe.

## **Vitamin E Acetate**

Vitamin E acetate is sticky, like honey, when vaporized. When inhaled, it coats the lungs including the alveoli. It remains in the lungs and increases the potential for illness and infection.



# What Is Vaping?

## Acetaldehyde

Inhaling acetaldehyde can harm the skin, eyes, and respiratory tract. According to the Environmental Protection Agency (EPA), it may also cause cancer.

## Acetone

According to the Centers for Disease Control and Prevention (CDC), acetone can irritate the nose, eyes, and throat.

## Formaldehyde

The American Cancer Society (ACS) states that formaldehyde can cause cancer in high doses.



# What Is Vaping?





# Questions?



Licking Memorial  
Health Systems

