

# Teen Brains and Future Health

**Town Hall Meeting**

# What We Know:

- **25 years old**

- **Brain Decision Making Function Develops (Pre-Frontal Cortex)**

- **90%**

- **Adults with Addictive Disorders Started Before Age 18**

# What Else Do We Know?

Local Data Shows:

- Alcohol is the #1 drug of choice
- Nicotine, Cannabis and Prescriptions are also used

# Where Do They Get Them?

- Unsecured in the Home (#1)
  - Kitchen Counter or Nightstand
  - Refrigerator
  - Purse
  - Duffel Bag
- Adult Relative or Friend Gives to Them
- Give Someone Older Money to Buy

# Where and When Do They Use Substances?

- At Their Home or Friend's Home (#1)
- On the Weekends (#1)



# What Does This Mean?

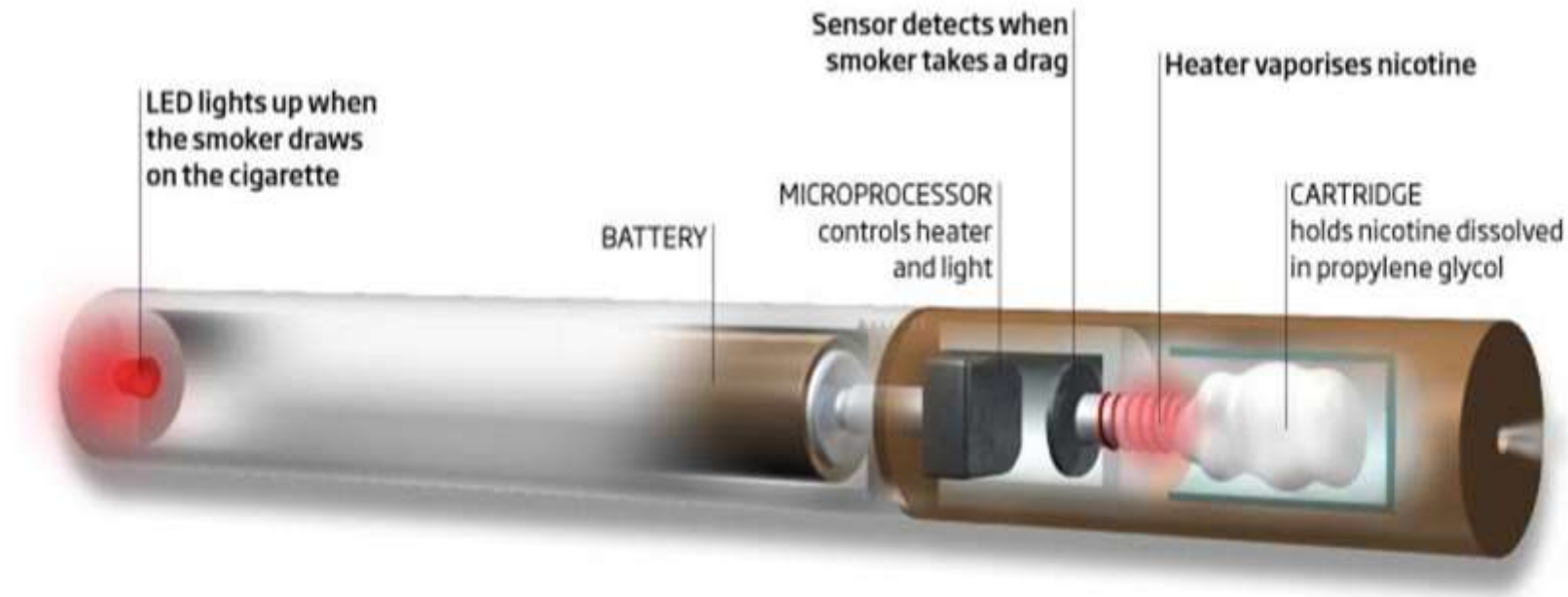
- **Be Informed**
- **Make Local Change**
- **Know Where to Get More Help**



# Teen Brains and Future Health-Vaping

# The “Operation” of an E-Cig

Upon inhalation the heater known as the atomiser vaporises the nicotine solution turning it into vapour. The user in turn inhales this to get the similar nicotine hit as a normal cigarette, and a real smoking satisfaction.





# Terms for Various Electronic Nicotine Devices

- E-cigarettes
- Cigalikes
- E-cigars
- E-pipes
- E-Hookah
- Vape Pens
- Hookah Pens
- Personal Vaporizers
- Mods



# Types of E-Cigarettes



Disposables



Rechargeable –  
Replacement Cartridges



Rechargeable –  
Refillable Tank System



Mods

# Über

Another example  
of a smaller  
device.



# Suorin Air and Charger

A small sleek  
vaping device that  
utilizes e-liquid.  
This device comes  
in a variety of  
colors and skins  
can also be  
purchased.



# Key Box Battery

This product is made to look like a laser cut key fob that is carried on a key chain.





# Highlighter Pipe

This product looks like your basic highlighter, however the back cap is metal. Also, some people will hollow out a highlighter to hide other products such as their Juul.



# Paracord Pipe Bracelet

A pipe bracelet  
that is discreet  
and fashionable.



# Lady Q

Designed to  
mimic a lipstick  
case





# Suorin Drop

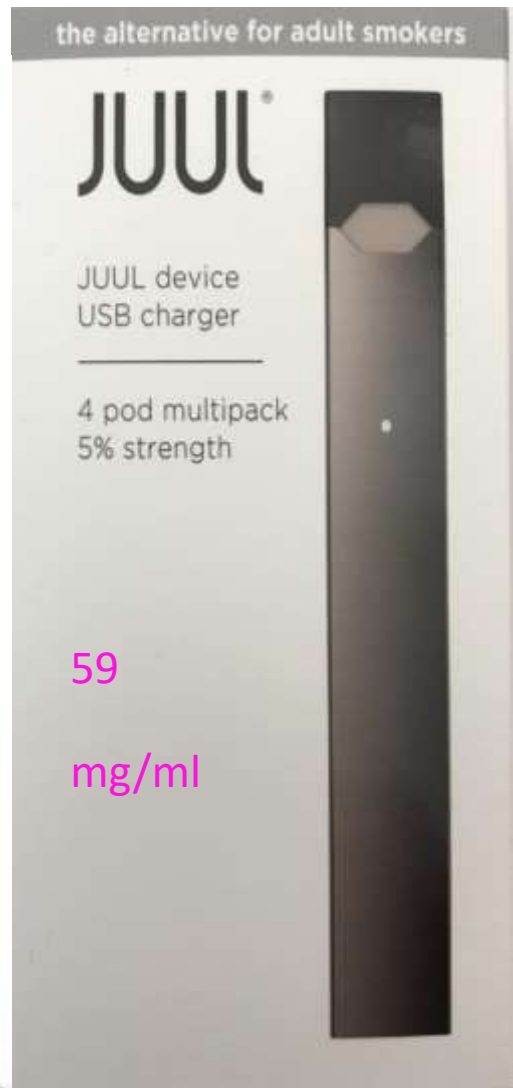
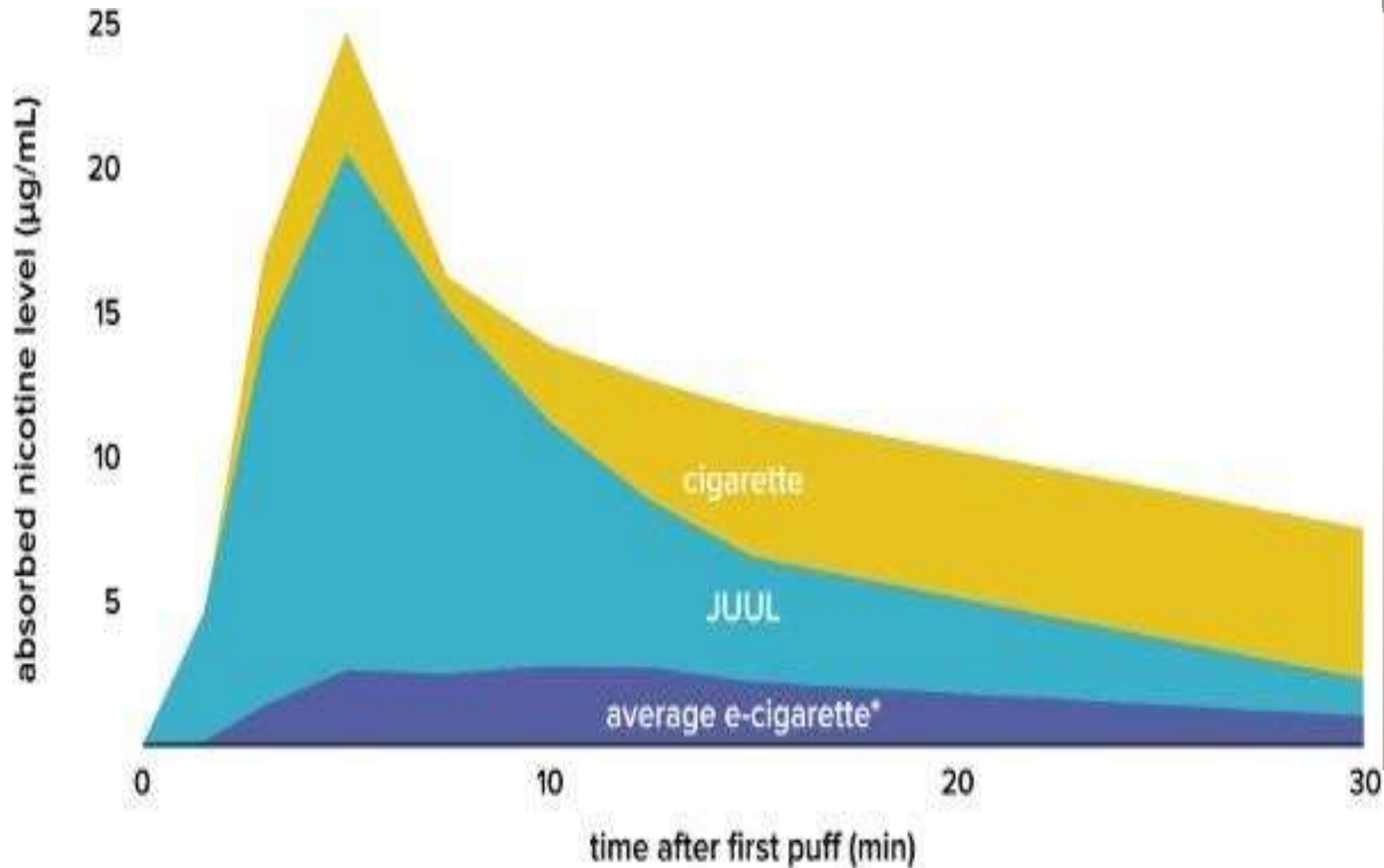
A small sleek vaping device that utilizes e-liquid. This device comes in a variety of colors and looks like the small tear drop highlighters.



# Juul

The Juul is a vaping device that is small and sleek. It looks like a USB drive. One Juul pod contains as much or more nicotine than a pack of cigarettes.





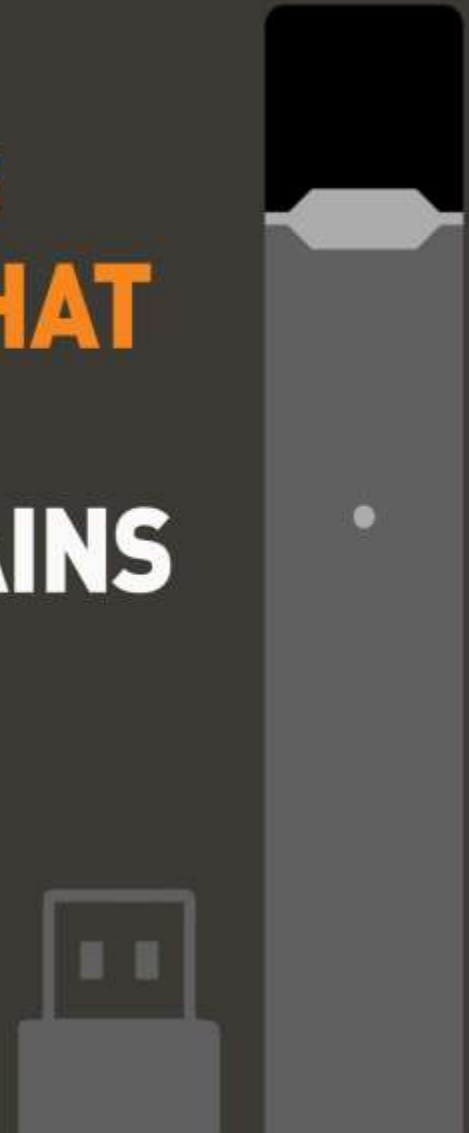
**63%**

**OF JUUL USERS  
DON'T KNOW THAT  
THE PRODUCT  
ALWAYS CONTAINS  
NICOTINE.**



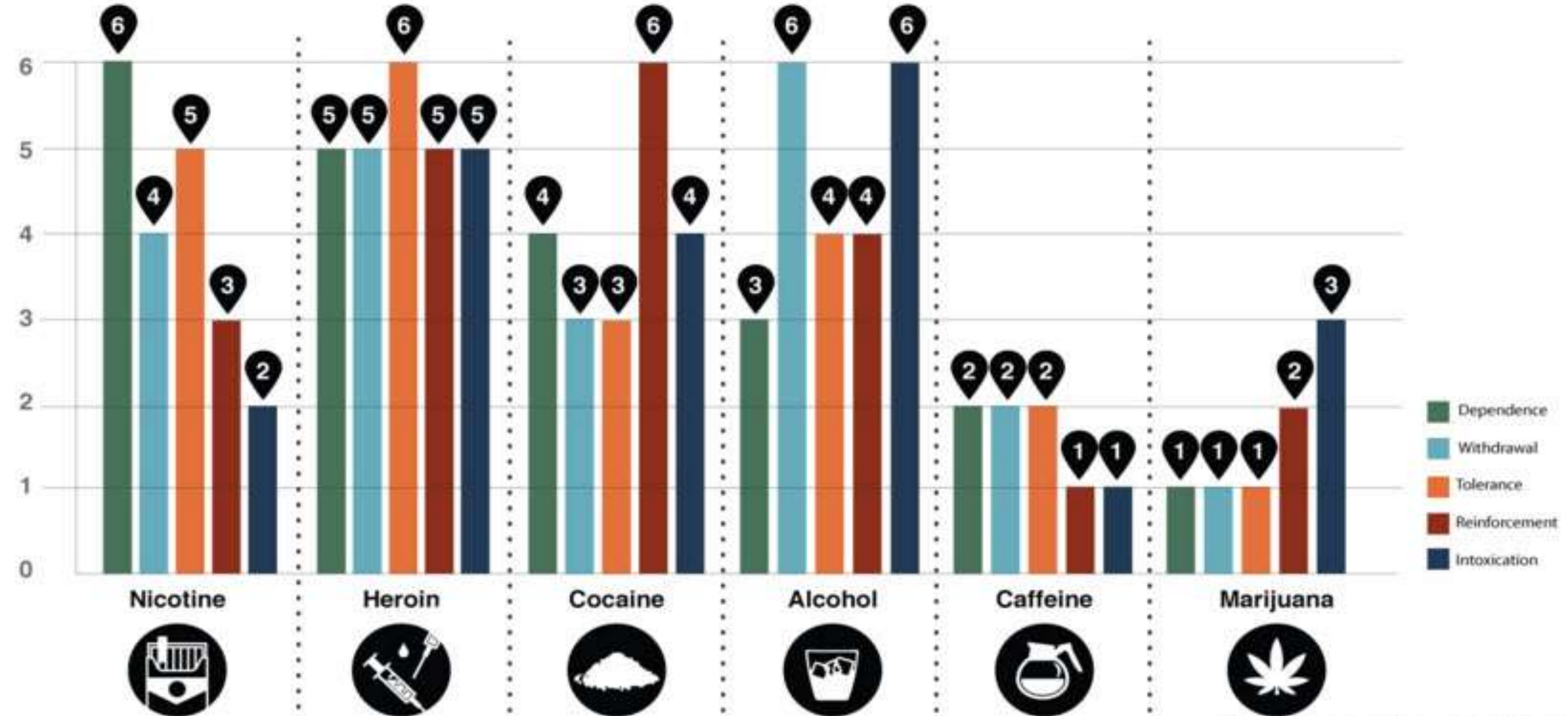
**truth initiative**  
INSPIRING TOBACCO-FREE LIVES

[truthinitiative.org](http://truthinitiative.org)



# COMPARING DANGERS OF POPULAR DRUGS

(Lower score indicates less serious effects)





# *E-Liquid or E-Juice*

- Over 460 brands (Zhu et al., 2014)
- 7,764 unique flavors

Vapor Chef's Funky Monkey

\$3.88/6ml bottle



# What's in the Aerosol?: It's NOT Water Vapor

- Nicotine
- Fine and ultrafine particles delivered are similar to conventional cigarettes
- Some tobacco specific carcinogens and toxins have been documented
- Propylene glycol – can cause respiratory distress and illness (Grana et al., 2014)
- Heavy Metals: tin, silver, iron, nickel aluminum, sodium, chromium, copper, magnesium, manganese, lead, potassium and silicate nanoparticles

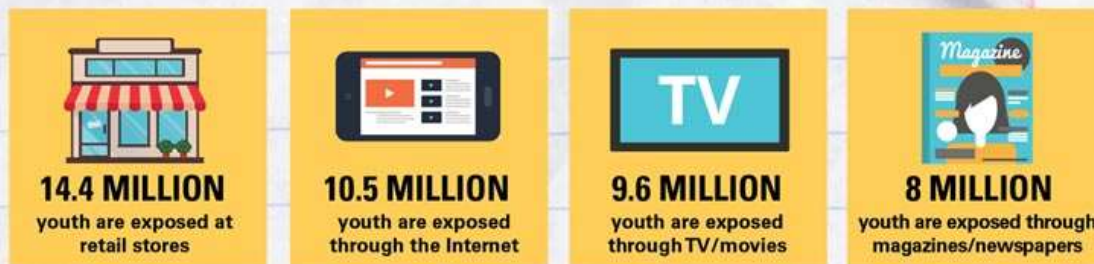
# Secondhand Aerosol

- Exhaled air contains (Schripp et al., 2012 and RTI 2015)
  - Nicotine
  - Ultrafine particles — inhaled deep in the lungs, and may cause cancer
  - Propylene glycol-- can cause respiratory illness (Grana et al., 2014)
  - Artificial flavorings
  - Heavy metals

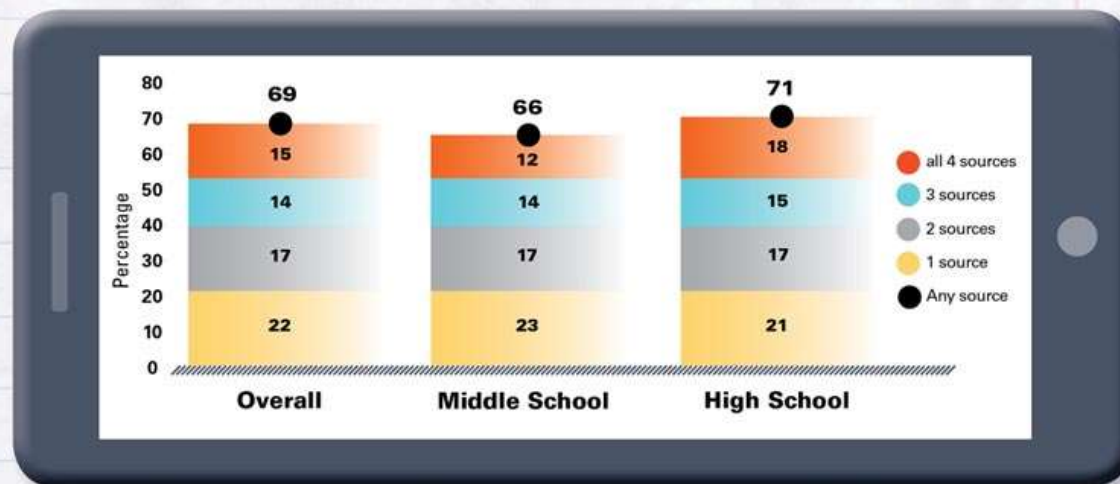


## Youth are exposed to e-cigarette advertisements from multiple sources.

### Sources of e-cigarette advertisement exposure



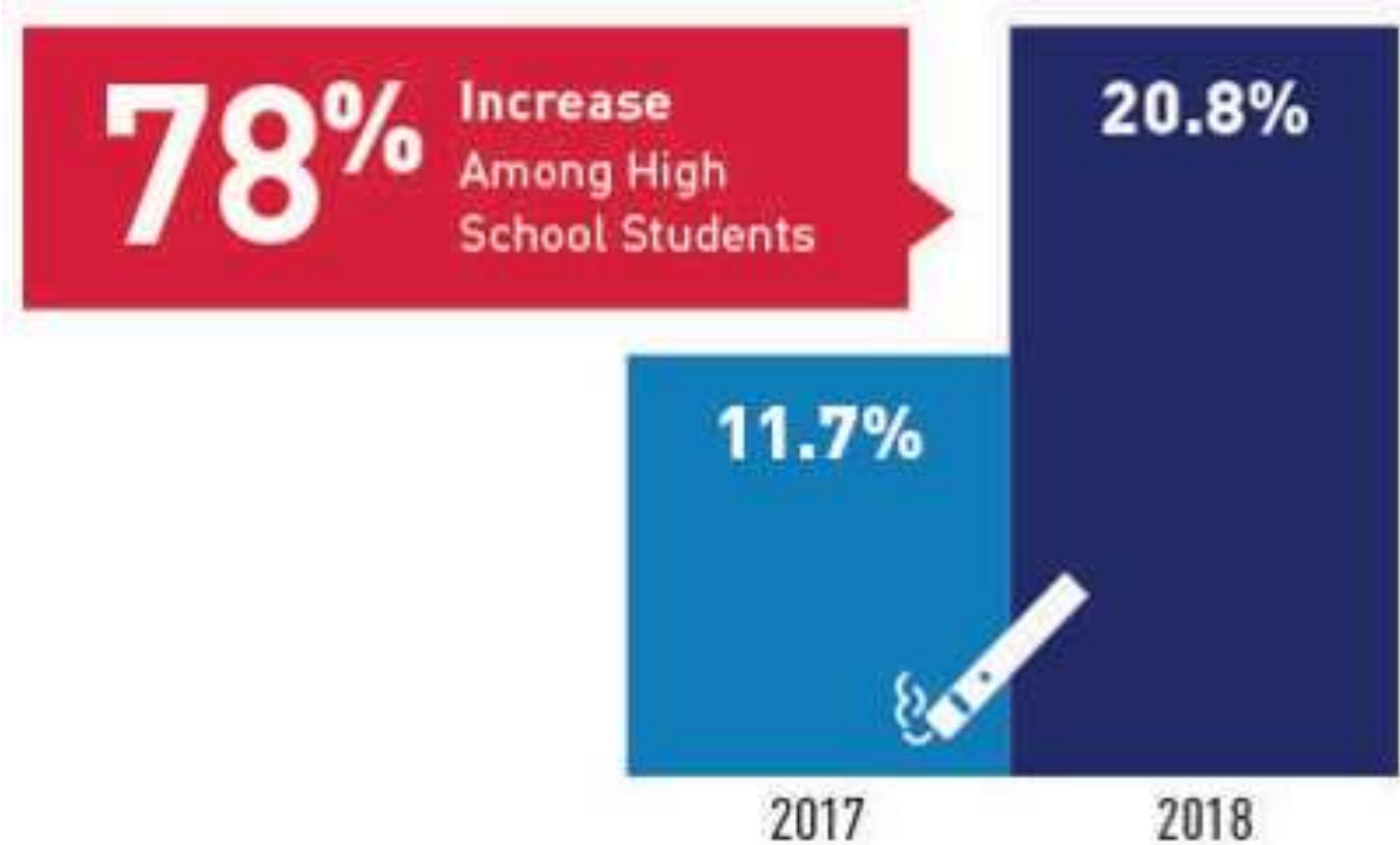
### US students exposed to e-cigarette advertisements, by school type and number of sources of exposure



\* Percentages may not add up exactly to any source due to rounding.

SOURCE: National Youth Tobacco Survey 2014.

# Surge in E-Cigarette Use Among Youth



# *Nicotine Poses Unique Dangers to the Developing Human*

*Nicotine is toxic to developing fetuses and impairs fetal brain and lung development*

*Poisonings occur among users via ingestion of nicotine liquid, absorption through skin, and inhalation*

*Nicotine use while adolescent brain is developing can disrupt brain circuit formation*



## Mix Your Own E-Juice



"I was on the train from New York to Baltimore and I enjoyed the pen the whole way there and back with no one noticing," said one life-long marijuana user who asked not to be identified. "I absolutely was thinking 'This is not bad at all.'"



# Public Health Concerns

- **Appeal to youth** – Flavorings and Marketing
- **Nicotine**
  - Potential for graduation
  - Harmful to adolescent brain development
- **Renormalization of smoking**
- **Use of other drugs** in vaporizer
- **Delay quitting** among smokers
- **Exposure** to secondhand aerosol
- **Child poisoning** from nicotine e-liquid



# Coronavirus and Smoking/Vaping

- Smoking or vaping could make you more vulnerable to a severe infection with the novel coronavirus, some experts say.
- Although there have not been many studies investigating this link specifically, a wealth of evidence suggests that smoking suppresses immune function in the lungs and triggers inflammation. There have been far fewer investigations of vaping, but preliminary research suggests it may do similar damage. And both long-term smokers and e-cigarette users are at a heightened risk of developing chronic lung conditions, which have been associated with more severe cases of COVID-19, as the disease caused by the new virus is called. Scientists say it therefore seems reasonable to assume that smoking—and possibly vaping—could increase the risk of developing a serious infection from the coronavirus.
- “All these things make me believe that we are going to have more severe cases—especially [in] people who are [long-term] smokers or vapers,” says Melodi Pirzada, chief of pediatric pulmonology at NYU Winthrop Hospital on Long Island.

# FOR MORE INFORMATION

## Contact

Ernest Watts, Region 8 Tobacco Lead

[ernest.watts@hth.co.roberson.nc.us](mailto:ernest.watts@hth.co.roberson.nc.us)

910 334-1488



*Welcome* TO THE  
**BRUNSWICK COUNTY SHERIFF'S OFFICE**  
SHERIFF JOHN W. INGRAM, V  
BOLIVIA, NORTH CAROLINA

**Lt. Jeff Beck**

<http://www.brunswicksheriff.com/>



NC National Guard  
Counterdrug Program  
(NCNG-CDP)

Josh Orihood

# NCNG-CDP

***Created by Congress in 1989, the Counterdrug Program is executed at the state/territory level and provides support to law enforcement (LE) and community based organizations (CBOs) at all levels of government.***

The NCNG-CDP is comprised of Soldiers and Airmen, most of whom are combat veterans and permanent members of our local communities.

We have unique military skills and specialized equipment that enhances both LE's capacity and supports CBOs to anticipate, deter, and eliminate threats to our community that are the result of illicit drug activities.

## **NCNG-CDP Support Areas:**

Analyst

Reconnaissance (Ground & Air)

Law Enforcement Training (MANTA)

Civil Operations (CivOps)

# Civil Operations (CivOps)

**CivOps Mission:** To support community based organizations (CBO) as they counter opioids and other drug threats. CivOps provides unique military skills in strategic planning, decision making processes, and cross-organization coordination in order to enhance community safety and promote community led efforts to develop and execute drug demand reduction strategies.

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## **How We Support CBOs:**

1. Coaching – using the Strategic Prevention Framework (SPF).
2. Facilitation – we are able to add process and structure to group meetings.
3. Training – provide training in the SPF and strategic planning.
4. Intermediary – able to serve as a liaison from a state/national agency.
5. Coordinator – we can be directly involved in planning activities.
6. Participant – through involvement in your activities, such as: meetings, committees or work groups.

# Contact Us

## **Civil Operations Team**

Brian Handlon

[brian.k.handlon.mil@mail.mil](mailto:brian.k.handlon.mil@mail.mil)

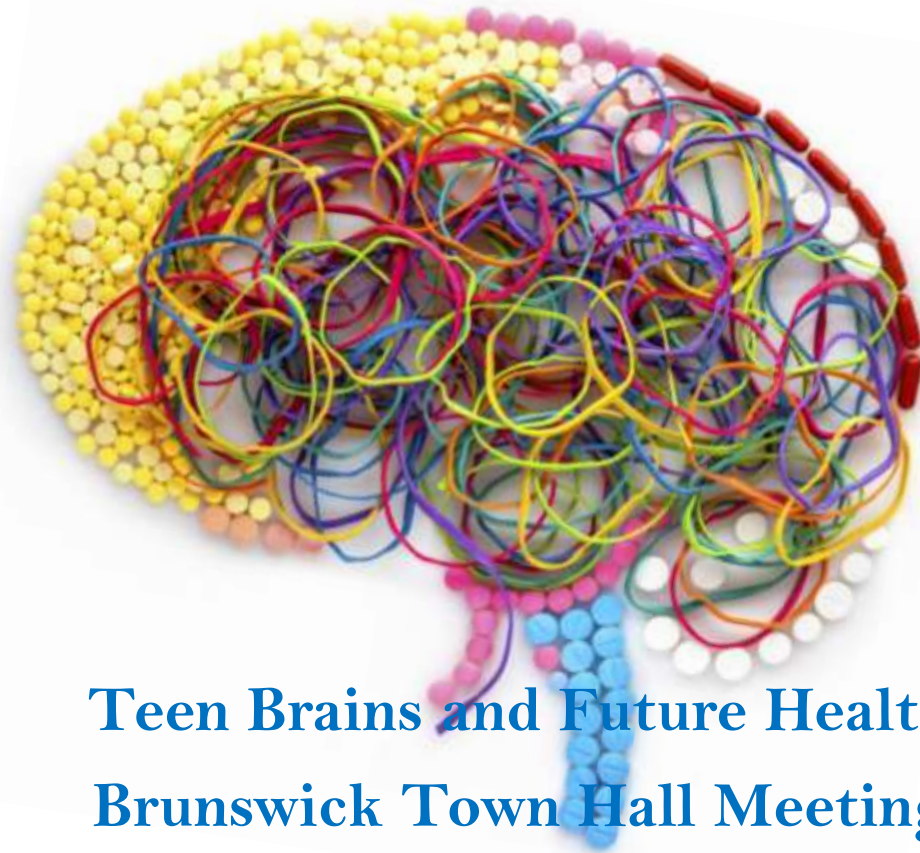
984-664-7649

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919-724-0629

[www.ncCounterdrug.com](http://www.ncCounterdrug.com)



**Teen Brains and Future Health  
Brunswick Town Hall Meeting**

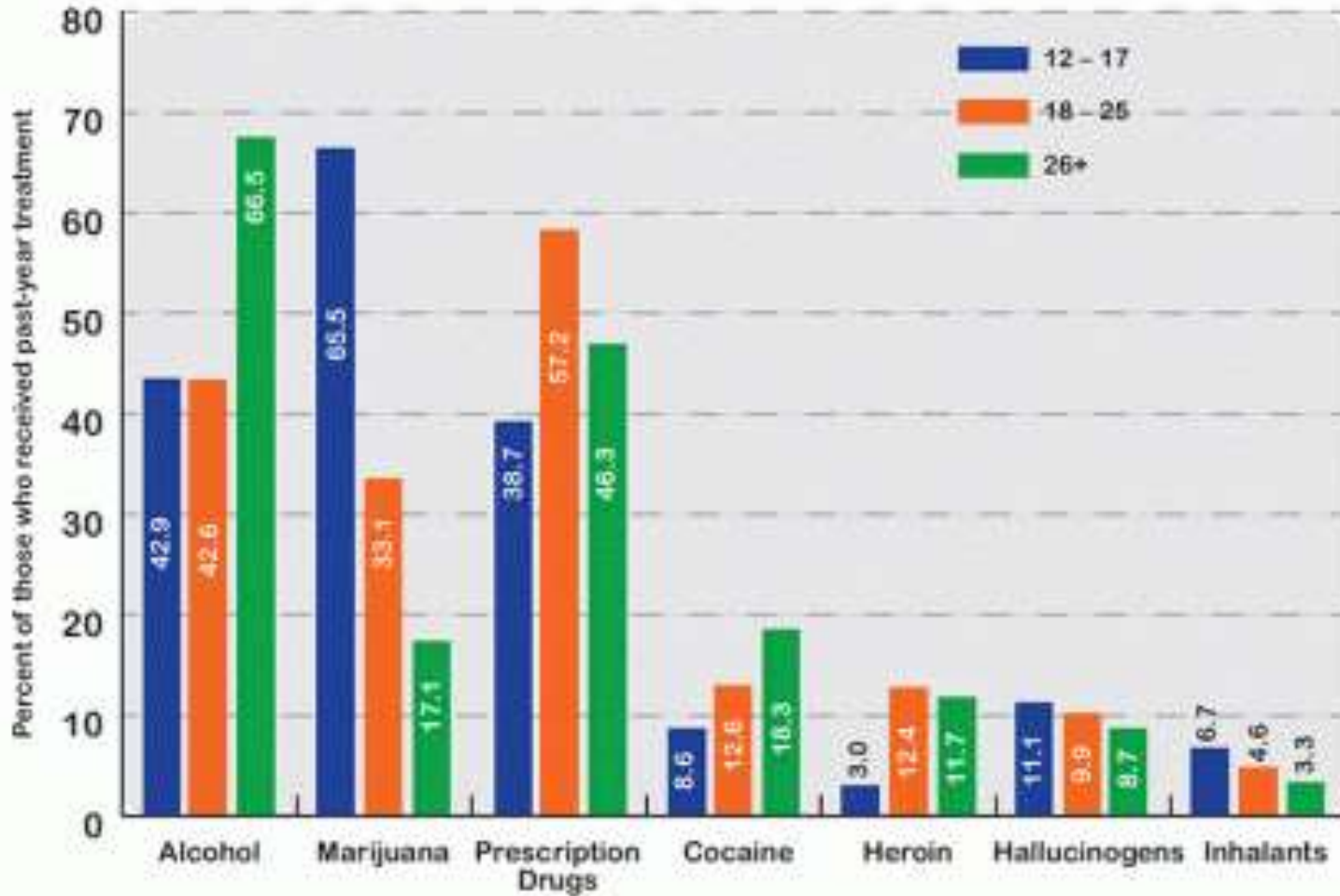
Presented By: Rakhee Patel, LPA, LCAS, CCS

# The Adolescent Brain

- Research has shown that brain development continues into the twenties
- The parts of the brain that process feelings of reward and pain—crucial drivers of drug use—are the first to mature during childhood.
- What remains incompletely developed during the teen years are the prefrontal cortex and its connections to other brain regions. The prefrontal cortex is responsible for assessing situations, making sound decisions, and controlling our emotions and impulses.



# Adolescents and Adults





Monitoring the Future is an annual survey of 8th, 10th, and 12th graders conducted by researchers at the Institute for Social Research at the University of Michigan, Ann Arbor, under a grant from the National Institute on Drug Abuse, part of the National Institutes of Health. Since 1975, the survey has measured how teens report their drug, alcohol, and cigarette use and related attitudes in 12th graders nationwide; 8th and 10th graders were added to the survey in 1991.

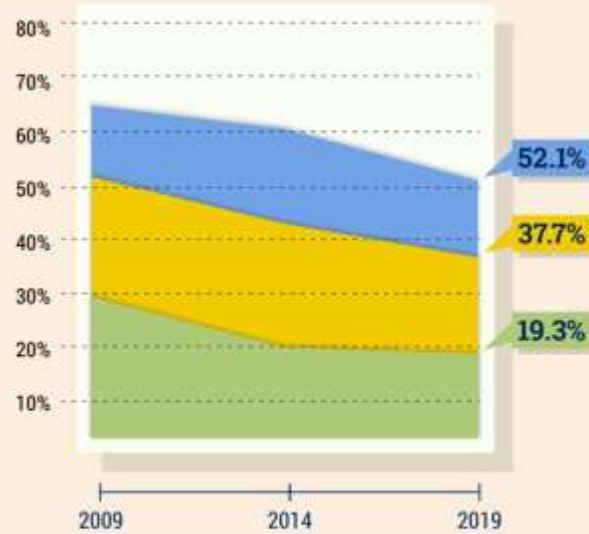
**42,531 STUDENTS FROM 396 PUBLIC AND PRIVATE SCHOOLS PARTICIPATED IN THE 2019 SURVEY.**



## ALCOHOL USE CONTINUES ITS DECLINE

### PAST YEAR ALCOHOL USE

Significant long-term decrease in all grades



### BINGE DRINKING\*

Significant long-term decrease in all grades



8th graders  
10th graders  
12th graders

\*5 or more drinks in a row  
in the past two weeks



DRUGABUSE.GOV

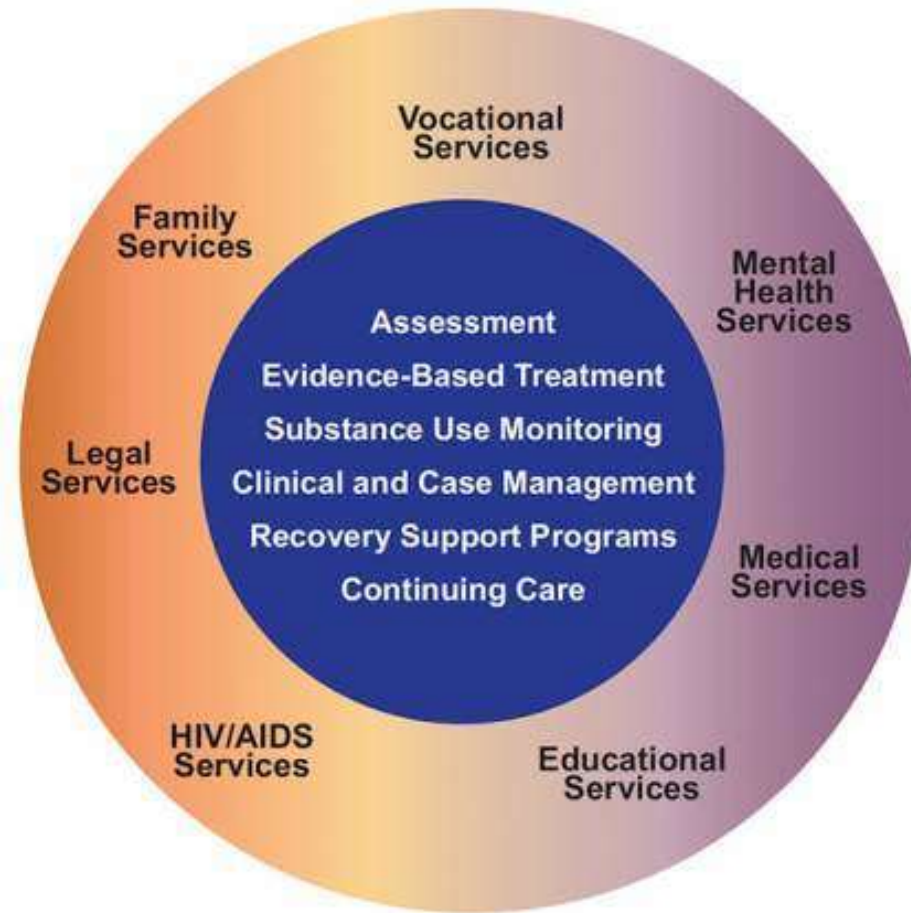
# Signs and Symptoms

- Bloodshot eyes
- Slow or slurred speech
- Fatigue/sleeping more than usual
- Deteriorating physical hygiene and grooming
- Failure to show up to school or other activities
- Self esteem issues
- Changes in friend group
- Mood swings/argumentativeness
- Lying
- High risk behaviors

# Barriers to Treatment

- Stigma, attitudinal, readiness for change, financial, and structural
  - Denial (either guardian or teen)
  - “It’s just what kids do”
  - “At least it’s legal”
  - Family attitudes
  - “What will other people think”
  - “Didn’t know where to go for help”

# Treatment for Teens



# The Seven Challenges<sup>®</sup>

- Comprehensive counseling program that incorporates work on alcohol and other drug problems. It is designed to motivate clients, whether they are in the adult or adolescent version, to evaluate their lives, consider changes they may wish to make, and then succeed in implementing the desired changes.
- It supports them in taking power over their own lives. 7 challenges provides a holistic approach to help adolescents identify their issues and promotes mindful self awareness and teaches decision making skills.
- It includes a individualized relapse prevention plan and provides a safe outlet to process struggles.

# Behavioral Approaches

- **Adolescent Community Reinforcement Approach (A-CRA)**
- **Cognitive-Behavioral Therapy (CBT)**
- **Contingency Management (CM)**
- **Motivational Enhancement Therapy (MET)**



# Family Based Approach

- **Brief Strategic Family Therapy (BSFT): 12-16 sessions**
- **Family Behavior Therapy (FBT)**
- **Multidimensional Family Therapy (MDFT)**
- **Multi-systemic Therapy (MST)**

# RECOVERY IS...

## BIOLOGICAL

- Acute withdrawal/ PAWS • STD's, HIV, HEP C • Medical and dental problems
- Pharmacotherapy to help with the process

## SOCIAL

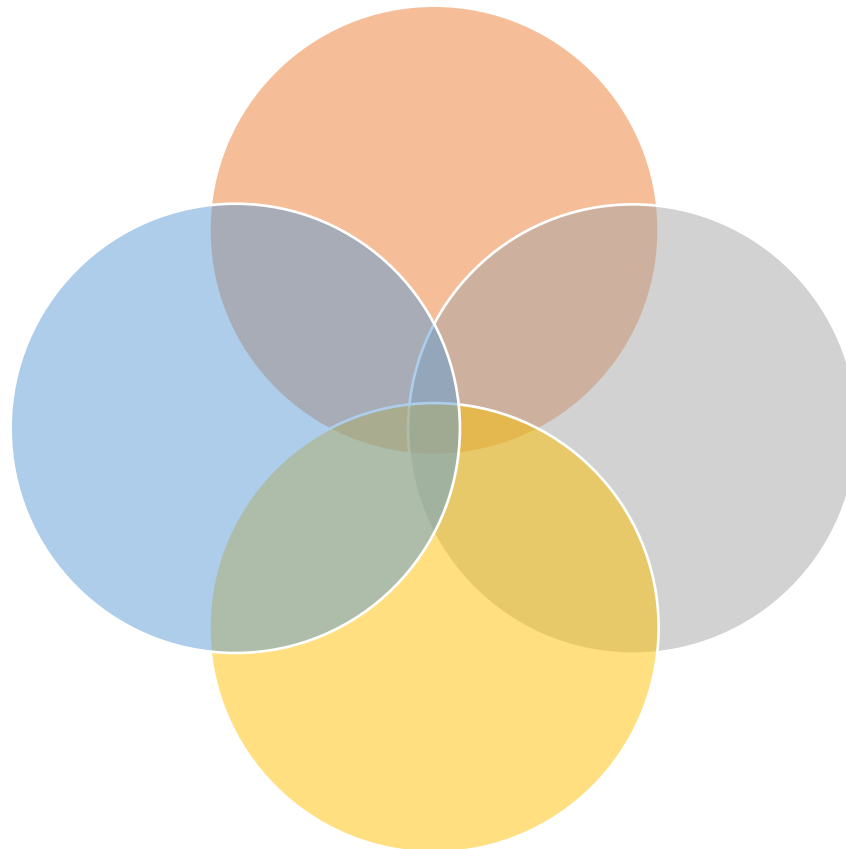
- Letting go of people, places, and things
- Addressing criminal justice issues
- Obtaining employment
- Developing a support network
- Addressing and rebuilding trust and familial relationships
- Making amends • Developing life skills

## PSYCHOLOGICAL

- Addressing abuse and trauma issues • Addressing grief and loss; Guilt and shame • Developing coping skills • Developing positive self talk • Addressing mental health symptoms

## SPIRITUALITY

- Discover & set values & beliefs
  - Forgiving oneself and making amends • Develop trust, the ability to experience awe and wonder, love, caring, joy
- Develop the ability to make connections
  - Acceptance
- Spirituality vs. religion



# Coastal Horizons Center

Intensive In Home: a team approach designed to address the identified needs of children and adolescents, who due to serious and chronic symptoms of emotional, behavioral, and/or substance use disorders, are unstable in the home and community without intensive interventions.

Wilmington Health Access for Teens (WHAT): ages 6-24 years old

Individual counseling appointments

Brunswick Office  
120 Coastal Horizons Drive  
Shalotte, NC 28470  
910-754-4515

Wilmington Office  
615 Shipyard Blvd.  
Wilmington, NC 28412  
910-343-0145

Pender Office  
309 Progress Dr.  
Burgaw, NC 28425  
910-259-0668

