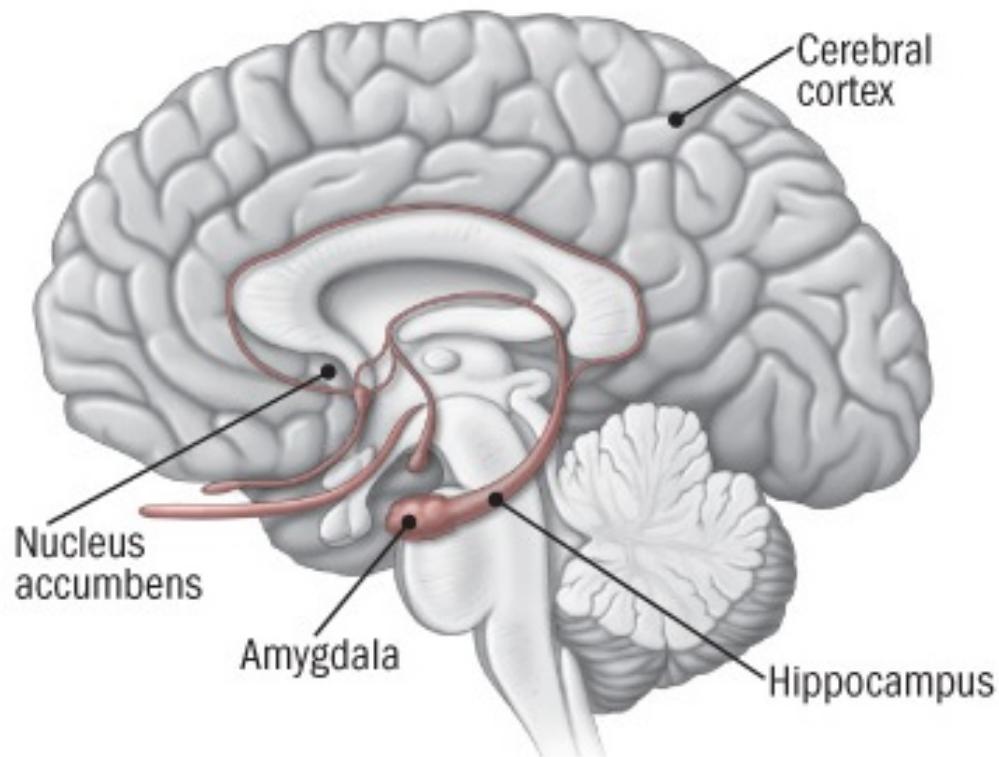


# MARIJUANA, ALCOHOL, TOBACCO, AND YOUR BRAIN



## **Brain's Reward System**



**ALL DRUGS EFFECT THE BRAIN.**

**MOST DRUGS THAT GET ABUSED IMPACT THE BRAIN'S REWARD SYSTEM BY RELEASING "FEEL GOOD" CHEMICALS LIKE DOPAMINE.**

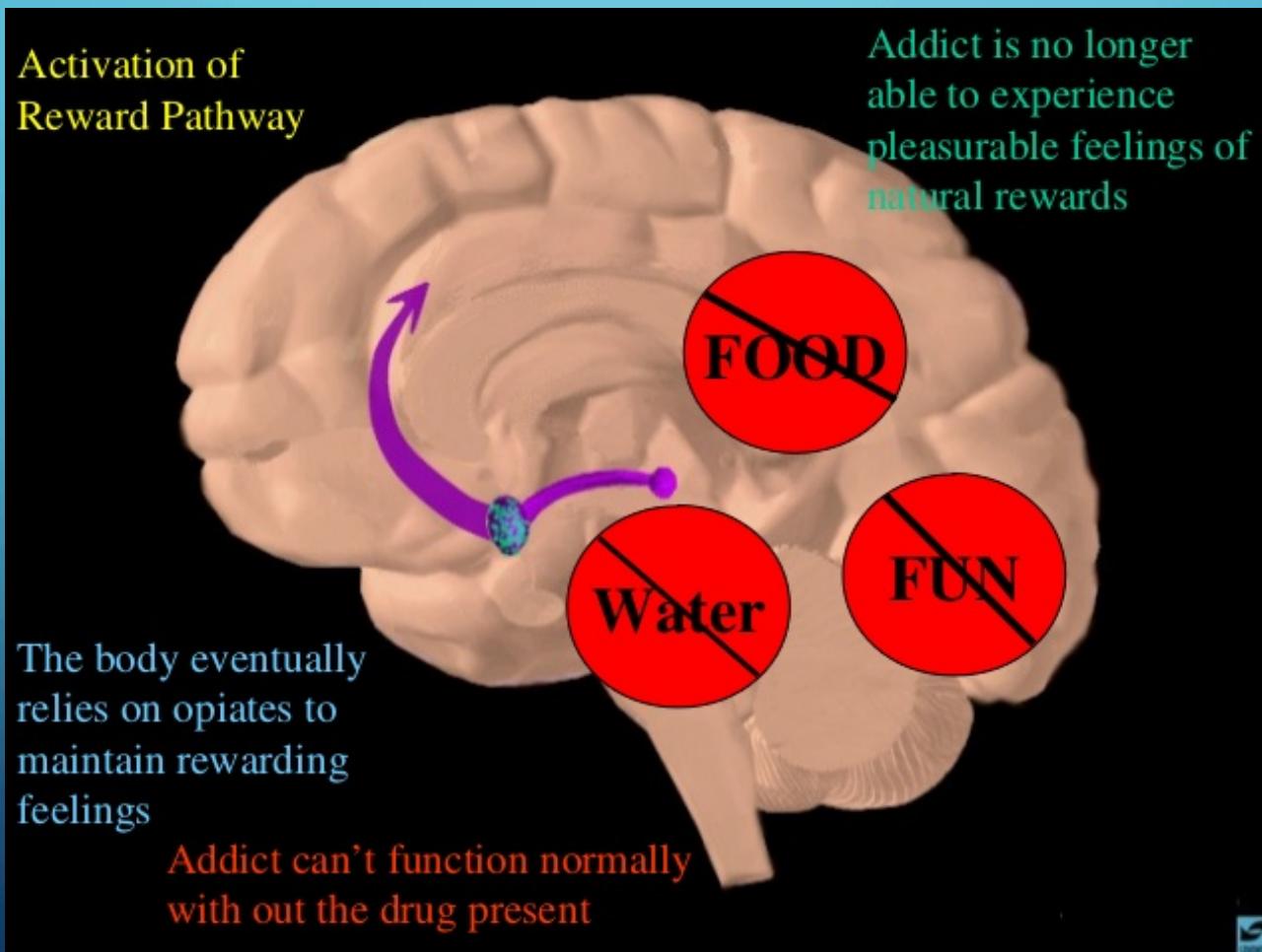


OUR BRAINS NATURALLY RELEASE DOPAMINE WHEN WE EAT OR EXERCISE.

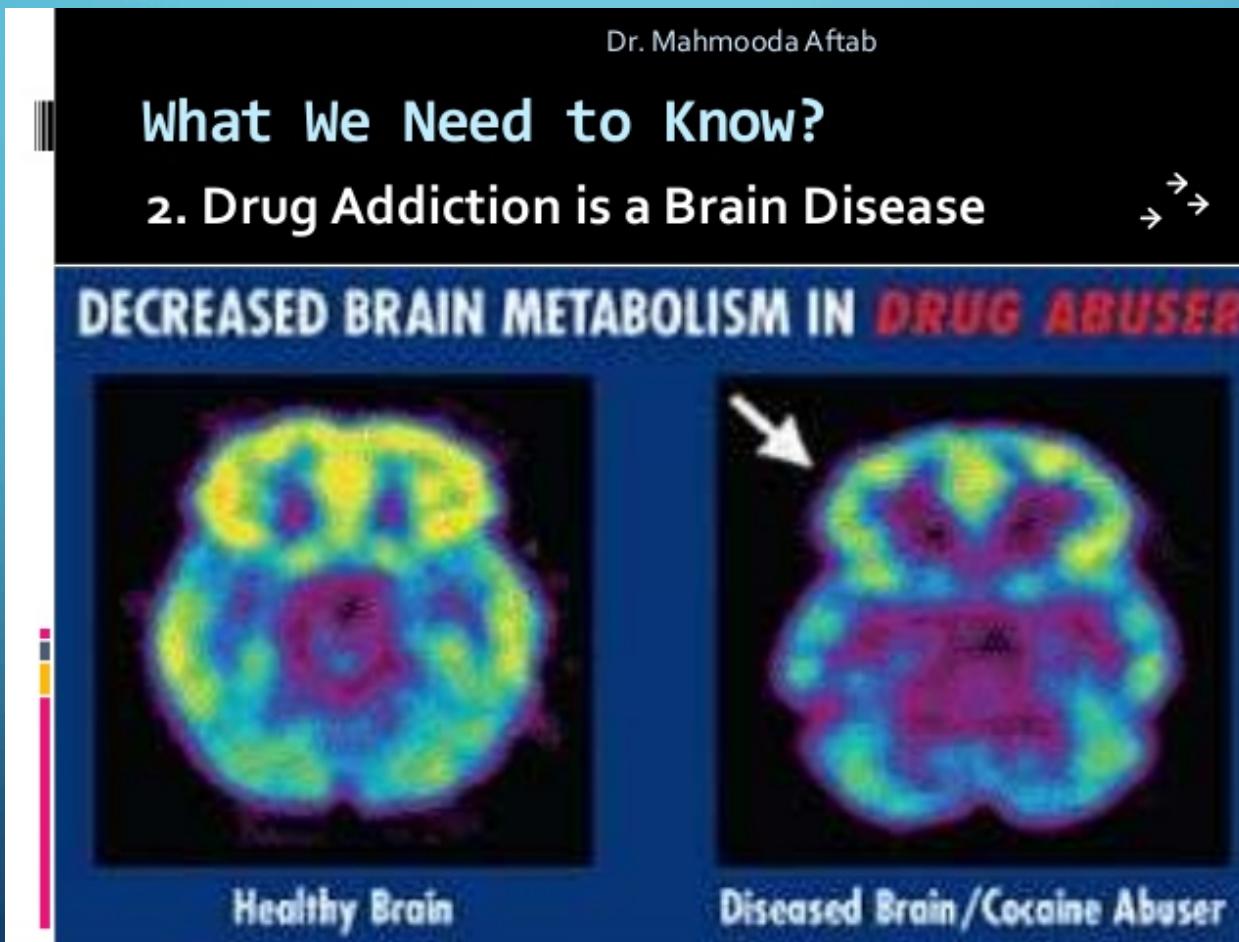
**DRUGS** RELEASE A TIDAL WAVE OF DOPAMINE.



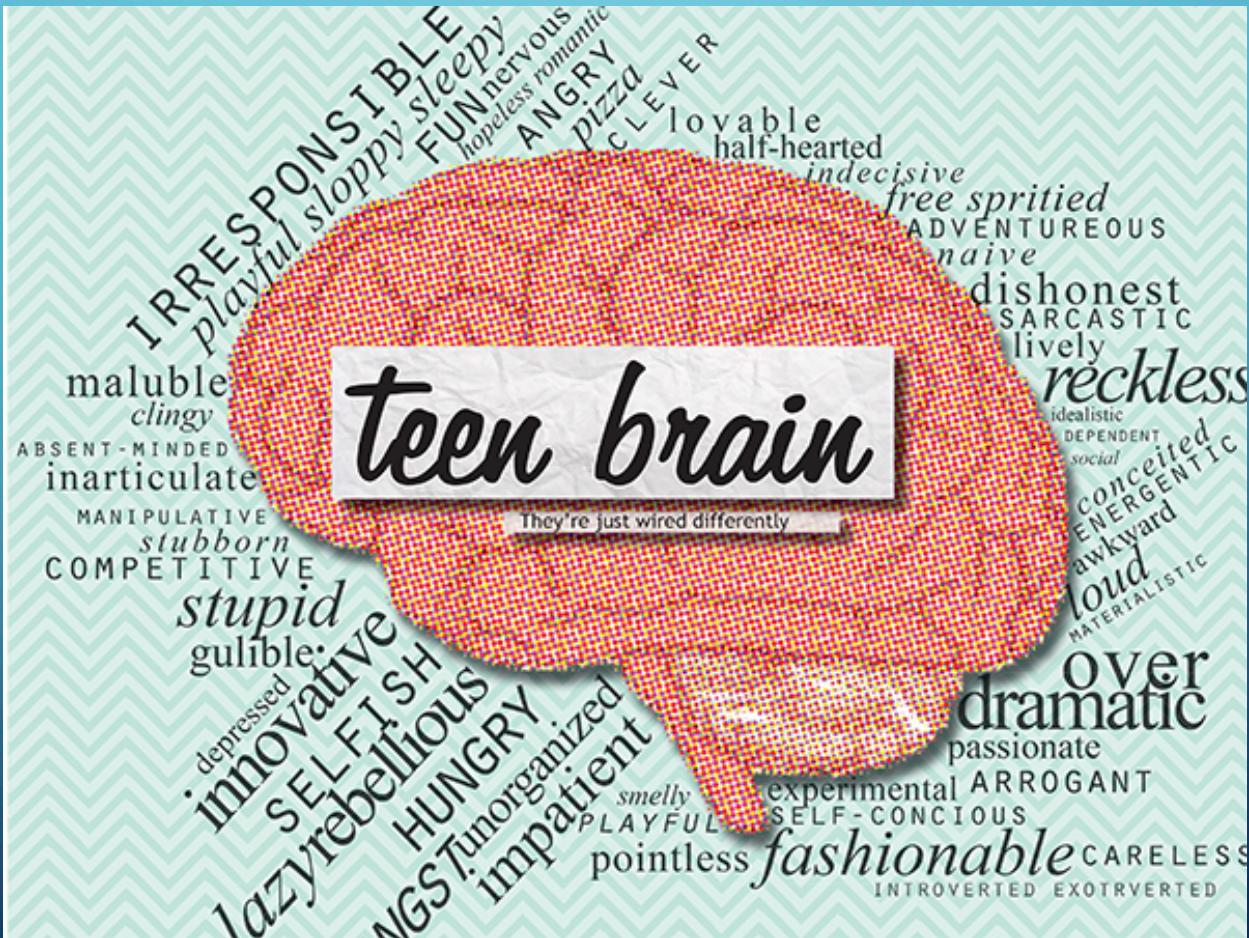
UNFORTUNATELY, ONCE OUR BRAINS GET THE DOPAMINE TIDAL WAVE, THE NORMAL DROPS WON'T SATISFY US ANYMORE . . . THAT'S HOW ADDICTION DEVELOPS.

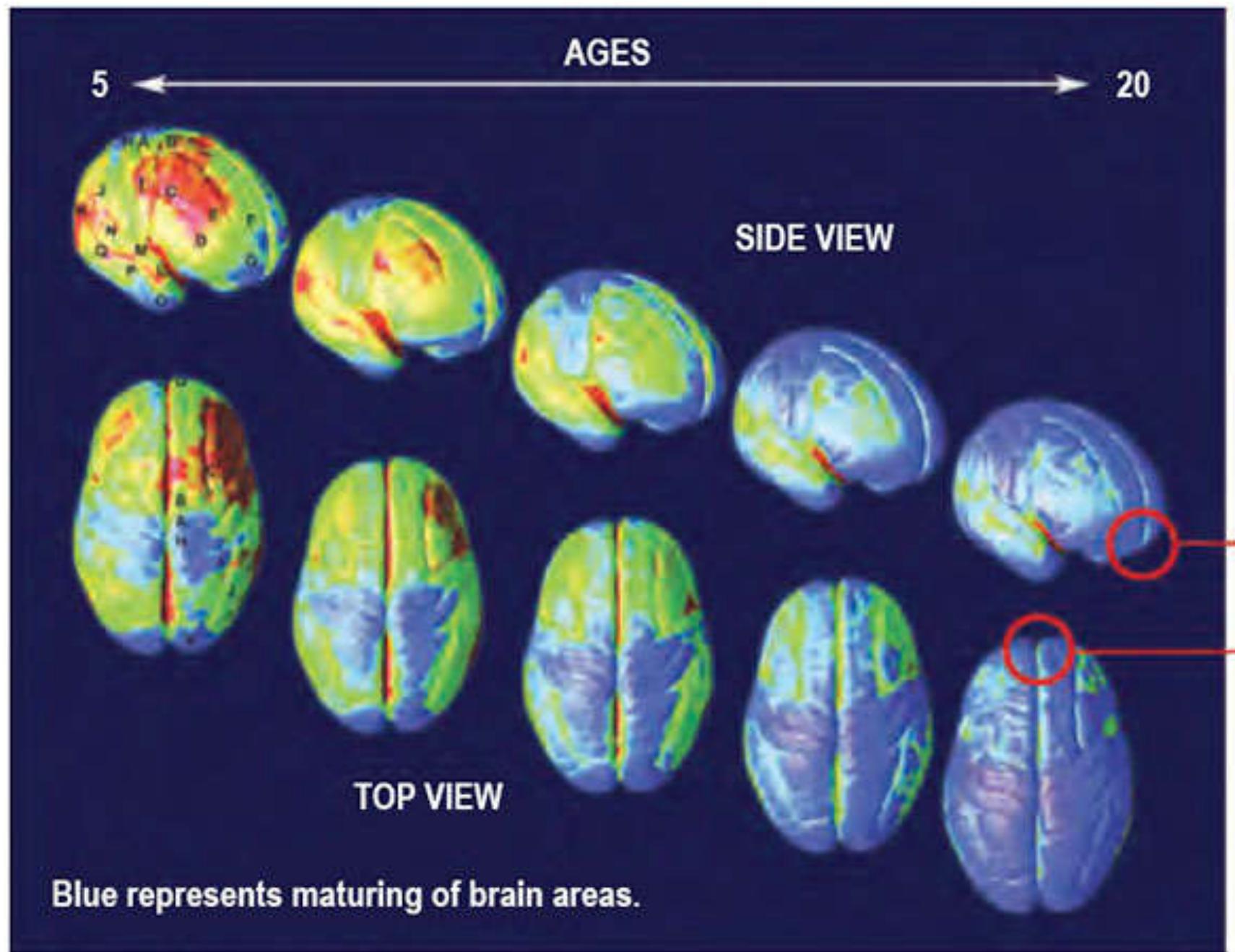


**ADDICTION IS AN ONGOING DISEASE OF THE BRAIN THAT LEADS PEOPLE TO REPEATEDLY USE DRUGS IN SPITE OF THEIR HARMFUL CONSEQUENCES.**



# WHAT DOES ALL THIS MEAN FOR THE BRAINS OF TEENAGERS?





# BECAUSE THE BRAIN IS NOT FULLY DEVELOPED UNTIL A PERSON IS ABOUT 25 . . .

- Teenage drug use can prime the brain for a lifetime of addiction problems.
- Teenage drug use can re-wire the brain's communication system, which leads to difficulties focusing and learning new information.
- Teenage drug use can permanently alter perception skills and alter how a person views reality. This can lead to long-term relationship problems and feelings of fear and depression.

# MARIJUANA

- Is the dried leaves and flowers of the hemp plant.
- It is usually smoked but can also be added to food.
- The main chemical in marijuana that affects brains is THC.
- THC stays in the body for weeks.
- Marijuana contains more than 400 chemicals, includinng some of the same cancer-causing substances found in tobacco.



# EFFECTS OF MARIJUANA

## SHORT TERM

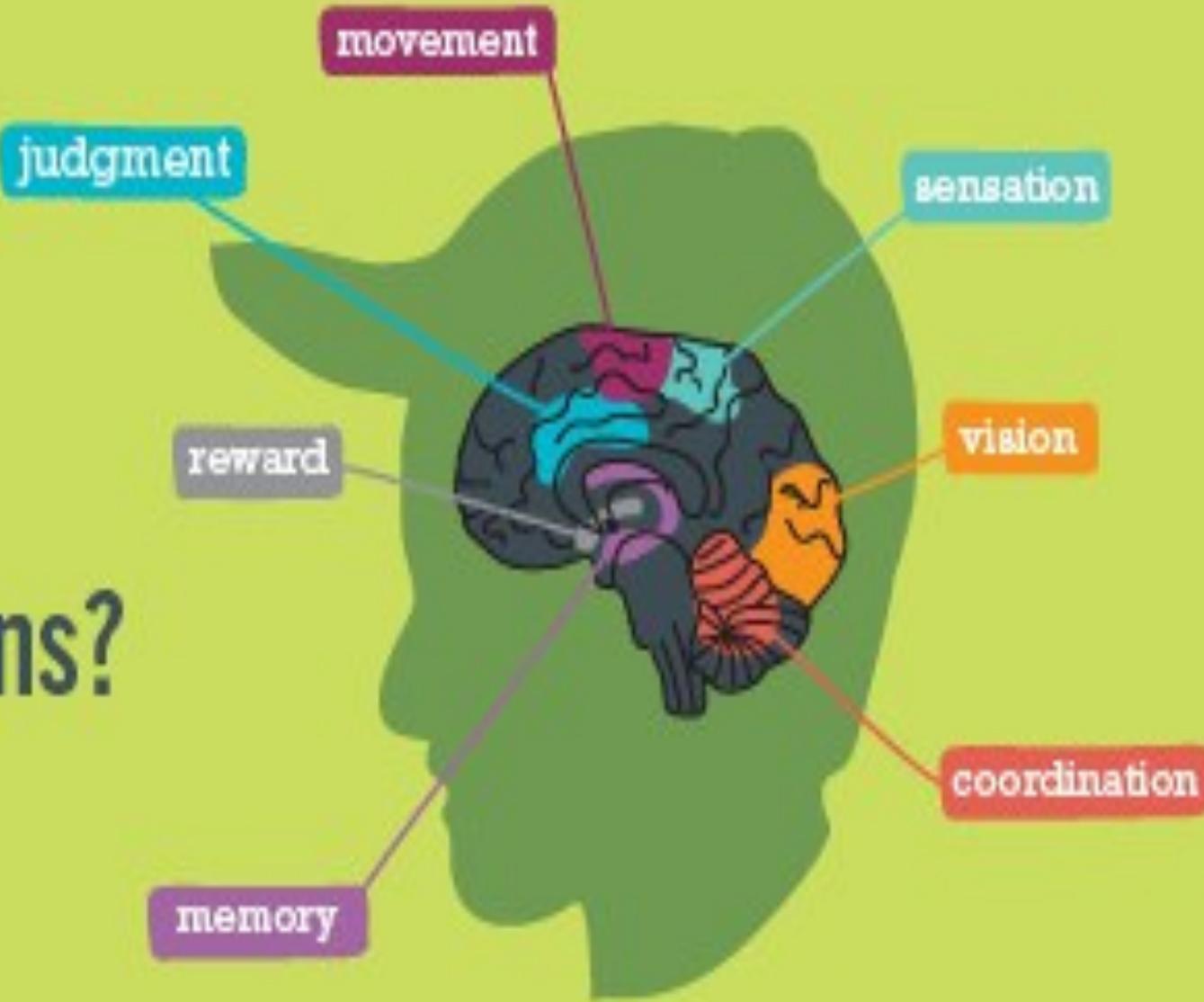
- Increased heart rate
- Slowed reflexes
- Short-term memory loss
- Vision problems
- Decreased concentration

## LONG TERM

- Lung cancer
- Bronchitis
- Decreased concentration, caring, and memory
- Mental illness
- Decreased hormone production



# How does pot affect young brains?



# ALCOHOL



- Is a depressant, which means it slows down vital body functions.
- Is a drug which reduces a person's ability to think rationally and distorts judgement.
- Drinking during the teenage years can lead to brain damage, especially in memory, motor (movement) skills, and coordination
- Car accidents are the #1 cause of death for teenagers. 31% of all fatal crashes involve alcohol.

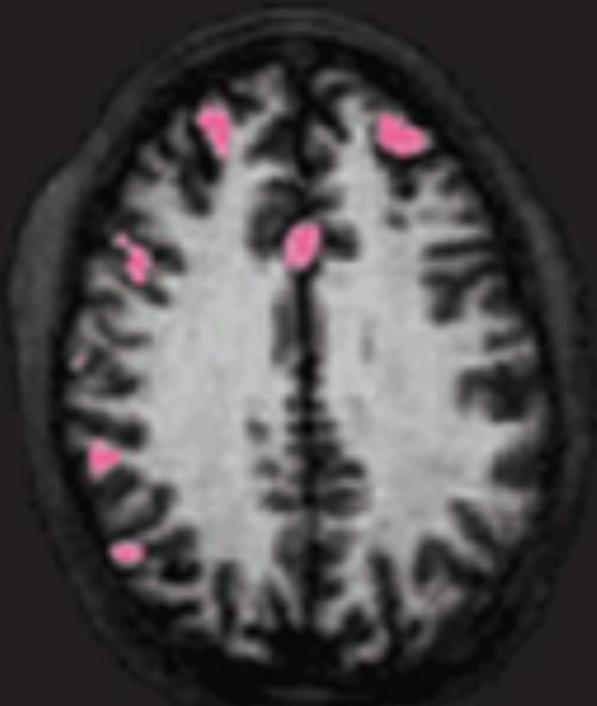
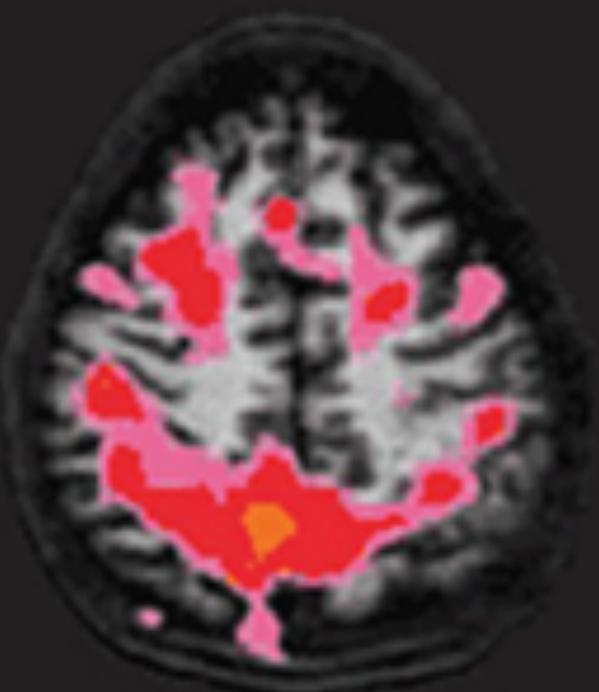
# Teen Brains More Vulnerable to Alcohol



- Alcohol can cause **short and long-term harm** to developing brain and bodies.
- Adolescents need only drink **half** as much to suffer the same negative effects.
- Perform **worse** in school.
- **Increased risk of** social problems, depression, suicidal thoughts, and violence.

**15-year-old male  
non-drinker**

**15-year-old male  
heavy-drinker**



**Brain activity while performing a memory task.  
Heavy drinker is sober during this test.**

Image from Susan Tapert, PhD, University of California, San Diego

# TOBACCO



All tobacco products come from the tobacco plant, which contains the highly addictive drug nicotine.

Tobacco use is the #1 cause of avoidable death in America.

Tobacco products include cigarettes, e-cigarettes, chew, snuff, candy-like tablets called “dissolvables,” and more. All cause heart diseases and most cause cancer.

10 TIMES MORE AMERICANS HAVE DIED FROM  
TOBACCO THAN ALL THE WARS IN U.S.  
HISTORY COMBINED.



# Risks from Smoking

Smoking can damage every part of the body

## Cancers

Head or Neck

Lung

Leukemia

Stomach

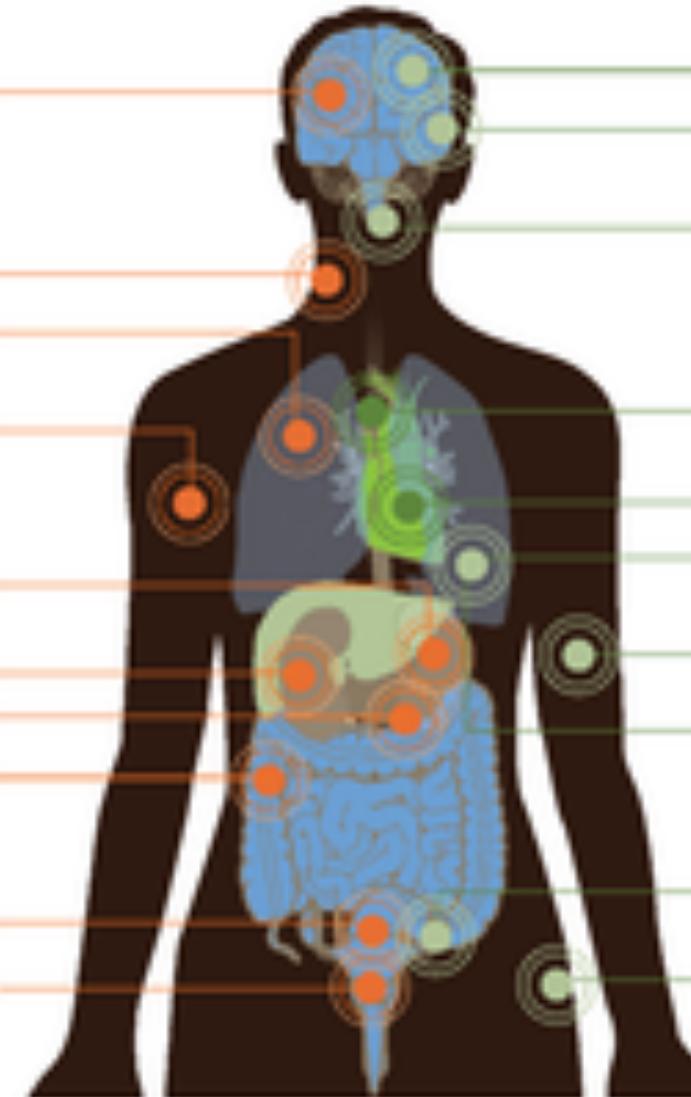
Kidney

Pancreas

Colon

Bladder

Cervix



## Chronic Diseases

- Stroke
- Blindness
- Gum infection

- Aortic rupture
- Heart disease
- Pneumonia
- Hardening of the arteries
- Chronic lung disease & asthma
- Reduced fertility
- Hip fracture

**CHEWING TOBACCO IS NOT SAFE.  
IT CAUSES GUM DISEASE, CANCERS OF THE  
MOUTH, AND HEART DISEASE.**



# E-CIGARETTES ARE NOT SAFE.

## WHAT IS AN E-CIG?



E-cigarettes contain harmful nicotine that is addictive and causes heart disease.

Vaping liquid, or “e-juice,” contains hundred of chemicals, some of which cause cancer if inhaled.

There're not many laws regulating e-cigarettes—who knows what people are putting in their bodies when they “vape?”

The battery in e-cigarettes can explode and cause severe burns as well as house fires.