

PROJECT YOUTH WELLNESS

**WEEK 3: UNDERSTANDING HEALTH
BEHAVIOR RISK IMPACTS**

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SUBSTANCE USE AS A HEALTH BEHAVIOR

Like nutrition, sleep, screen time, and physical activity, substance use is also a health behavior! Some substances, like prescription medications, can be beneficial for your health if prescribed by a doctor, but using illegal substances or misusing legal substances (including prescription medications) is damaging to your health. Before we dive into the difference between the ways substances affect your health, consider the questions below.

When you hear the word "drugs," what comes to mind? What types of substances?

Why is it important to understand the different ways these substances affect your health?

Throughout this unit, we will learn about the different factors that can make substance use a health-damaging behavior and how it can specifically impact young people.

PSYCHOACTIVE EFFECTS OF SUBSTANCES

Regardless of drug classification status, legal or illegal, all substances affect the central nervous system—the brain and body.

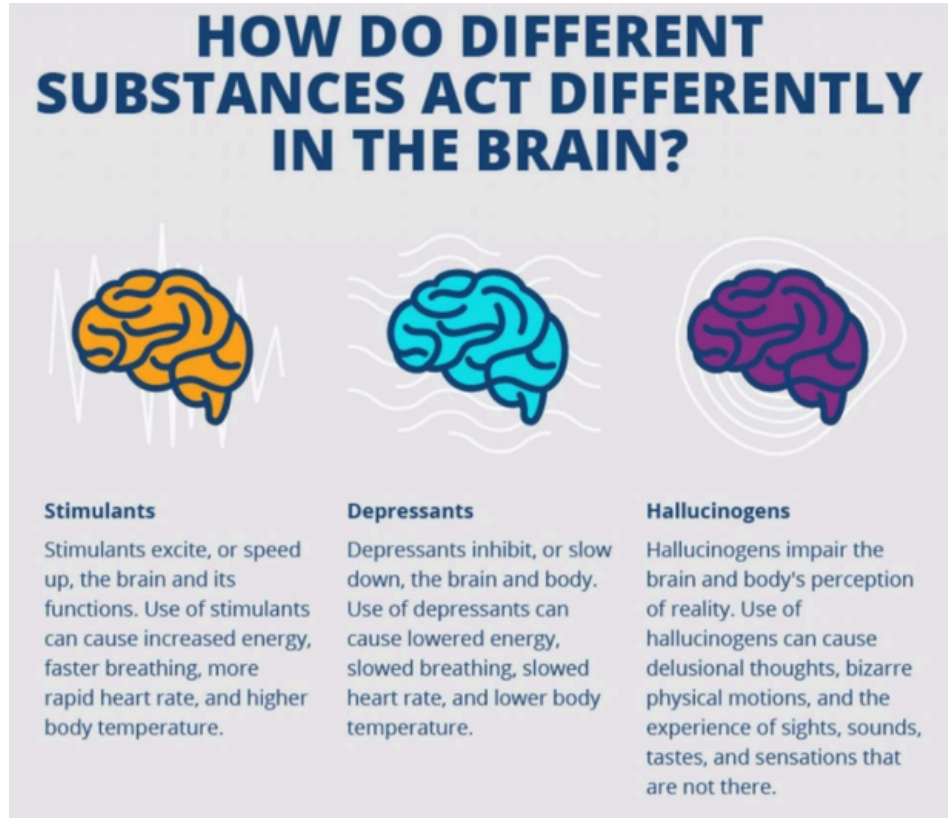


Image source: <https://www.sandstonecare.com/resource-library/drugs/the-effects-of-drugs-on-teens-developing-brains-1>

Think about commonly used substances by young people your age. Using the boxes below, list them under each of the categories depending on how you think they affect the central nervous system (brain and body).

Depressants

Stimulants

Hallucinogens

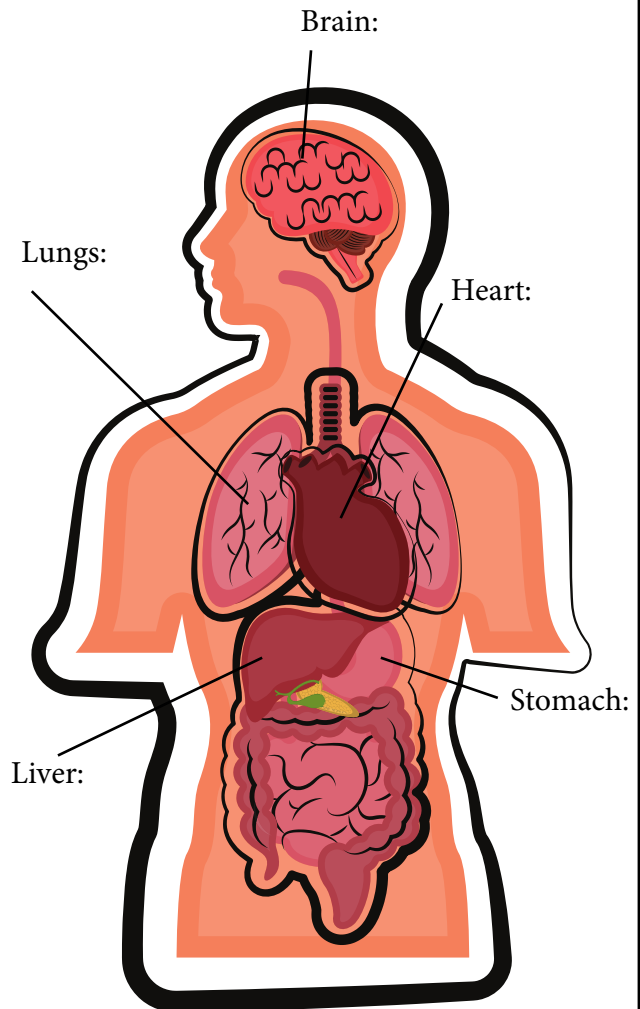
DRUGS EFFECTS ON THE BRAIN AND BODY

All drugs have many negative physical and mental health consequences to the brain and body, no matter whether they are being used to cope with problems, to fit into a certain crowd, or just to experiment. Some of these effects are immediate, and others you won't know about until many years later. That's one of the scary things about drugs.

Look at the different drugs on the left. Write the letter on which part of the body you think each drug affects the most

WORD BANK:

- A. ALCOHOL
- B. COCAINE
- C. CIGARETTES/E-CIGARETTES
- D. CRYSTAL METH
- E. INHALANTS
- F. MARIJUANA
- G. METHAMPHETAMINE
- H. PRESCRIPTION PAIN MEDICATIONS
- I. STEROIDS



DRUG EFFECTS ON THE BRAIN AND BODY

Review the section below that summarizes key points on how various body parts are affected by different drugs. How many areas did you guess right?: _____ (fill in a number)

BRAIN

ALL drugs affect the brain in significant ways. Drugs affect a person's ability to make decisions, learn, remember, sleep, and control their behavior or emotions. Frequent use of marijuana decreases a person's IQ and can cause learning problems, poor grades, and an increased risk of school drop-out. Excessive alcohol use impairs a person's ability to drive and causes risk for injury and death. Repeated use of methamphetamine and cocaine leads to long-term neurological damage, causing hostility, anxiety, and paranoia.

Heroin and **prescription opioid** drugs lead to cognitive impairments, and **inhalants** lead to long-term brain damage.

MOUTH

Methamphetamine has an unflattering effect on your mouth by causing "meth mouth"—this is the effect of teeth clenching and a craving for sugary drinks and foods, affecting tooth and gum decay. **Marijuana** causes poor oral health by making users feel hungry—this effect is known as the "munchies," which can lead you to eat high-sugar foods and increases risk for dental cavities.

LUNGS

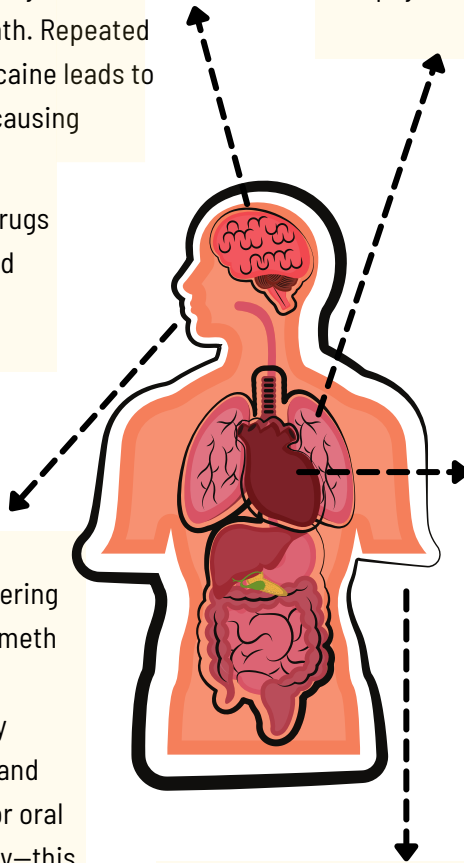
The lungs are significantly affected by **any** smoked forms of drugs. Here are some facts: Inhaling (through vaping or smoking) **marijuana or e-cigarettes** irritates the airways, causing severe damage to the lungs, including inflammation and phlegm buildup. Consequences are chronic cough, bronchitis, respiratory infections, emphysema, cancers, and making it hard to sleep or exercise.

HEART

All drugs affect the heart, because drugs go into your bloodstream and straight to your brain, affecting the blood the heart pumps. Here are a few well-established facts: **stimulants**, like methamphetamine and cocaine, cause the heart to over-work because they raise the heart rate to unhealthy levels; alcohol and **prescription opiates** do the opposite because they are depressants and slow down the heart. Misusing opioids can slow down the heart so much that it stops pumping, resulting in overdose death.

SKIN

The skin can be greatly affected by certain drugs. Steroids and methamphetamine have been shown to have immediate effects on the skin's outer appearance, making someone look aged and sick. **Steroids** cause acne, baldness in males, and both baldness and facial hair in females. **Methamphetamine** can result in the sensation of bugs crawling under the skin, causing picking or scratching, leaving self-inflicted wounds!



MARIJUANA EFFECTS ON THE DEVELOPING BRAIN

Below are the effects of marijuana use. Research points out that effects are greater when consumption patterns are outside of public health standards: frequent use, vaping, longer duration, higher amount (dose), and when mixed with other substances.

Marijuana use has been linked to serious effects on the developing brain as shown in the boxes below. Marijuana use significantly interrupts an already under-developed brain system—the prefrontal cortex—which has lasting consequences on decision making, judgment, self-control, impulsivity, and learning (IQ) later on in life.

Cognitive Ability

- ↓ IQ
- ↓ Attention
- ↓ Visual Search
- ↓ Executive Functioning
- ↑ Impulsivity

Brain Structure

- ↓ Prefrontal Cortex Volume
- ↓ White Matter in Prefrontal Cortex
- ↓ Prefrontal Cortex Thickness
- ↓ Total Gray Matter
- ↓ Total White Matter

Brain Function

- Changes in blood oxygen levels in areas responsible for
- Working Memory
 - Inhibition

Marijuana Concentrations:

Did you know that from 1995-2015 there was a **212% increase** in the THC (psychoactive chemical found in marijuana) content in marijuana flower? Prior to the 1990s, the typical concentration of most strains was **2% or less**. Now, many strains have close to **30% concentration**, while other products like oil, dab, and edibles can have **up to a 95% THC concentration!**

“Synthetic Cannabinoids”

Synthetic (lab-made) cannabinoids are NOT the same thing as regular cannabis/marijuana. These substances, including K2 or “spice”, have other dangerous chemicals that can cause psychosis/hallucinations, anxiety, memory loss, seizures, and other negative side effects.

Delta-8 THC: Delta-8 is THC product that has not been approved by the FDA for safe use in any context.



- The FDA reports that hospitalizations and poison control calls related to Delta-8 included complaints of hallucinations, dizziness, tremors, vomiting, and loss of consciousness.
- Manufacturers may supplement Delta-8 with other harmful chemicals.

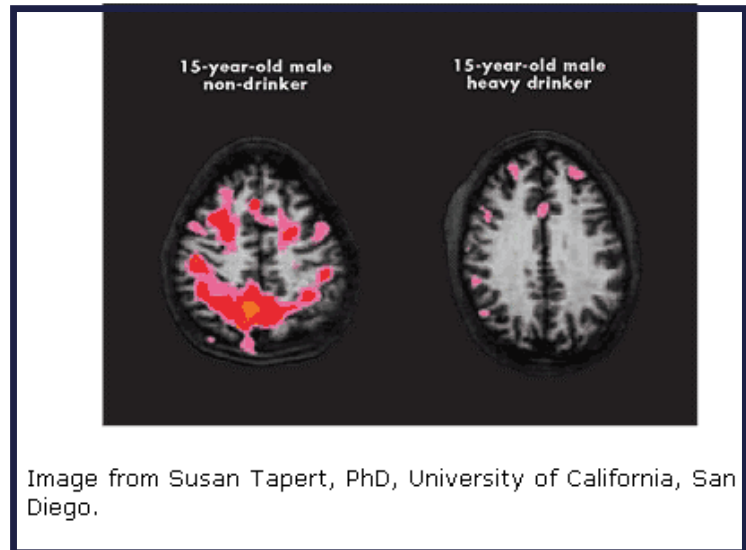


ALCOHOL EFFECTS ON THE DEVELOPING BRAIN

When drinking, do people typically just have one beverage? No— usually when drinking socially (with friends), more than one drink is consumed.

The **figure on the right** shows a brain comparison of a 15-year-old heavy drinker vs. a 15-year-old non-drinker. The pink color on the brain scan represents brain activities during a cognitive task. The scan shows that heavy drinking causes major harm to the youth brain, shown by lack of pink coloring during a cognitive task in a brain scanner. *Note: Heavy drinking is defined as binge drinking (five+ drinks for males; four+ drinks for females on the same occasion for five+ days in the past month).*

Review the blood alcohol content (BAC) levels in this chart. Reflecting on these rates (linked to consumption pattern risks), what stands out to you in terms of impacts on the developing brain that you have witnessed or observed among people who drink alcohol?



.01-.02	Clearing of head
.02-.05	Mild throbbing rear of head, slightly dizzy, talkative, euphoria, confidence, clumsy, flippant remarks
.06-.10	↓inhibitions, ↑talkativeness, ↓motor coordination, ↑pulse, stagger, loud singing!
0.2-0.3	Poor judgment, nausea, vomiting
0.3-0.4	Blackout, memory loss, emotionally labile
0.4+	Stupor, breathing reflex threatened, deep anaesthesia, death

Review and Reflection



Let's Review

Let's review what we learned so far. Here's a brief summary:

- There are five stages of change we all go through when it comes to health behaviors:
pre-contemplation, contemplation, preparation, action, and maintenance.
- It is completely normal to have setbacks and revert to an earlier stage of change.
- Recognizing risk factors (barriers to change) and protective factors (supports for change) can help us maintain our behavior change and prevent setbacks.

Reflect on things that stood out to you from this section, things you never knew about, and things you will be sharing with others. Also, include any other reflections or questions you have about the information that was covered.
