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About me:

- Primary Care PA, Kaiser Permanente 2013- present
- Graduated from University of Washington – 2013
- Seattle Met "Top Doc" 2016 & 2019
- Den Leader- Pack 564
- Eagle Scout- Troop 438

KAISER PERMANENTE

Shop Plans Get Care Find a Doctor Member Resources

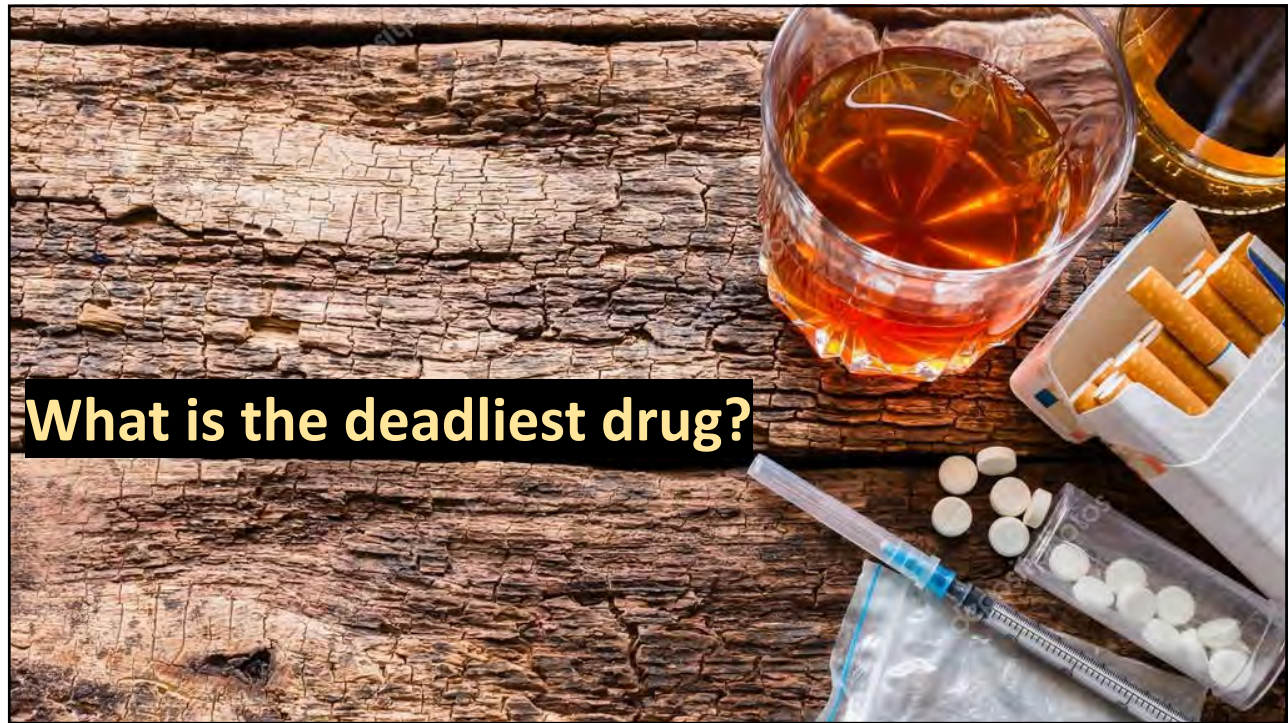
Ryan Buchan, PA-C

✓ Accepting New Patients

"My goal is to help patients better understand the circumstances surrounding their health, so that they can make informed decisions in a comfortable setting."

Request an Appointment

2



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4

TOBACCO

90% of daily tobacco users begin by age 18

Smoking damages blood vessels and can make them thicken and grow narrower. This makes your heart beat faster and your blood pressure go up. Smoking also predisposes you to developing dangerous blood clots.

With 480,000 deaths each year, cigarette smoking is the leading cause of preventable death in the United states.

Smoking increases risk of cardiovascular disease (like heart attack and stroke) by 2-4 times, and smokers are 12 to 13 times more likely to die from COPD

Lung diseases caused by smoking include COPD, which includes emphysema and chronic bronchitis.

Cigarette smoking causes 90% of all lung cancers, but that's not all...

Source: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm

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TOBACCO

Smoking can cause cancer almost anywhere in your body.



You can quit.
For free help: 1-800-QUIT-NOW.



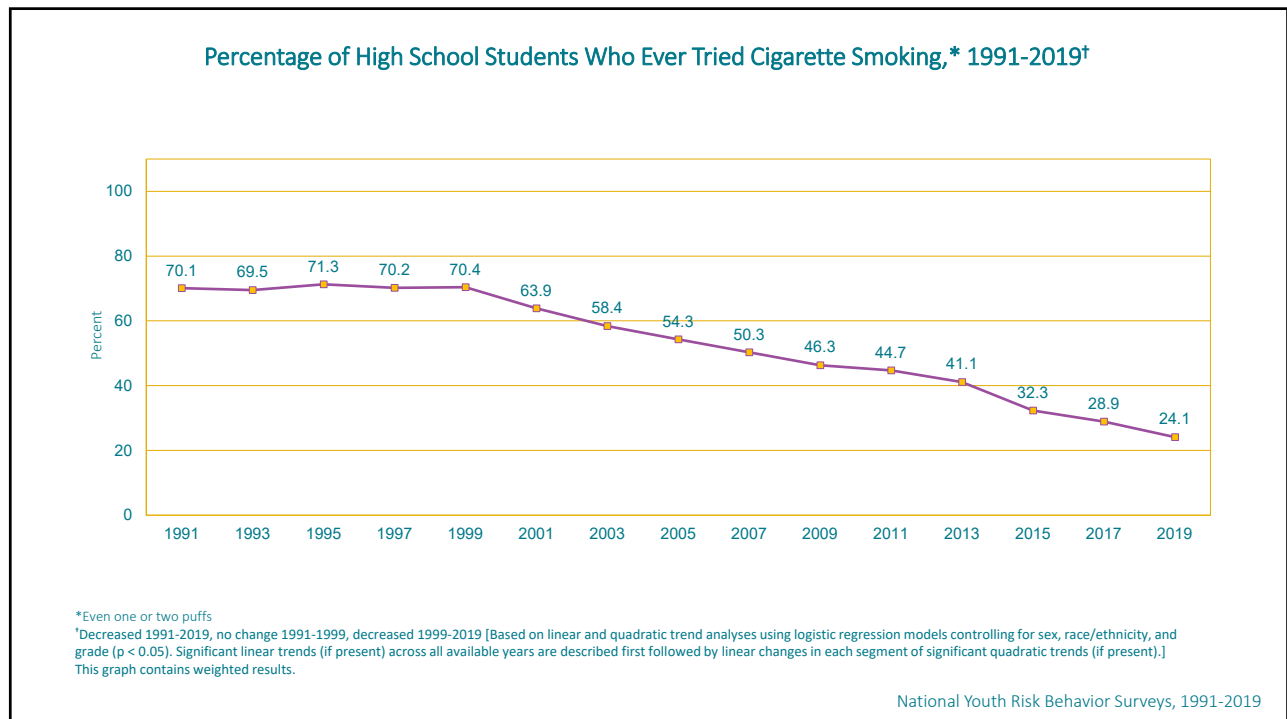
CDC.gov/quit

If nobody smoked, one of every three cancer deaths in the United States would not happen.

6

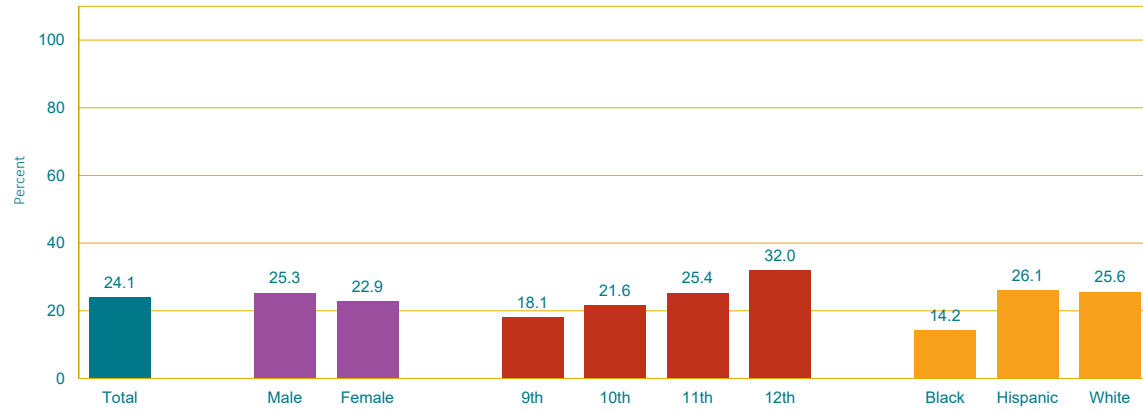


7



8

Percentage of High School Students Who Ever Tried Cigarette Smoking,* by Sex, Grade,† and Race/Ethnicity,† 2019



*Even one or two puffs

†10th > 9th, 11th > 9th, 12th > 9th, 12th > 10th, 12th > 11th; H > B, W > B (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

9

Percentage of High School Students Who Ever Used an Electronic Vapor Product,* 2015-2019†



*Including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, and hookah pens [such as blu, NJOY, Vuse, MarkTen, Logic, Vapin Plus, eGo, and Halo]

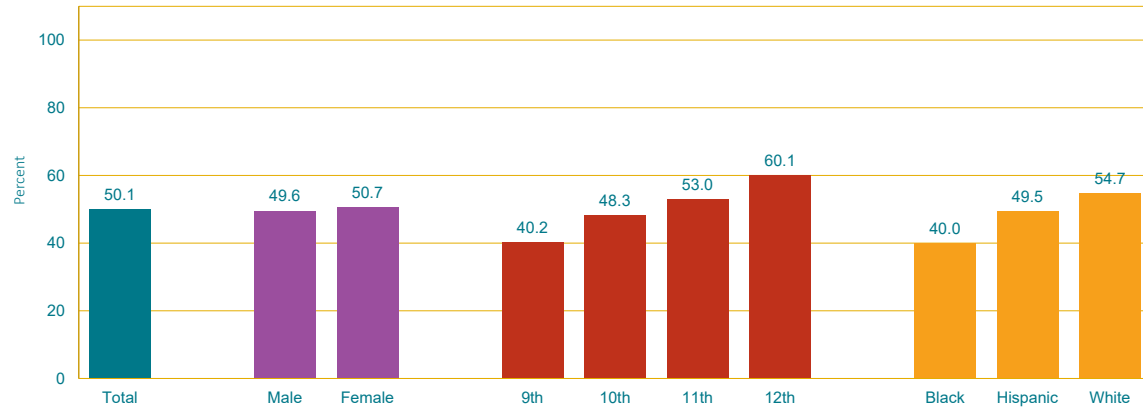
†Increased 2015-2019 [Based on linear trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$).]

This graph contains weighted results.

National Youth Risk Behavior Surveys, 2015-2019

10

Percentage of High School Students Who Ever Used an Electronic Vapor Product,* by Sex, Grade,† and Race/Ethnicity,† 2019



*Including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, and hookah pens [such as blu, NJOY, Vuse, MarkTen, Logic, Vapin Plus, eGo, and Halo]

†10th > 9th, 11th > 9th, 11th > 10th, 12th > 9th, 12th > 10th, 12th > 11th; H > B, W > B, W > H (Based on t-test analysis, $p < 0.05$.)

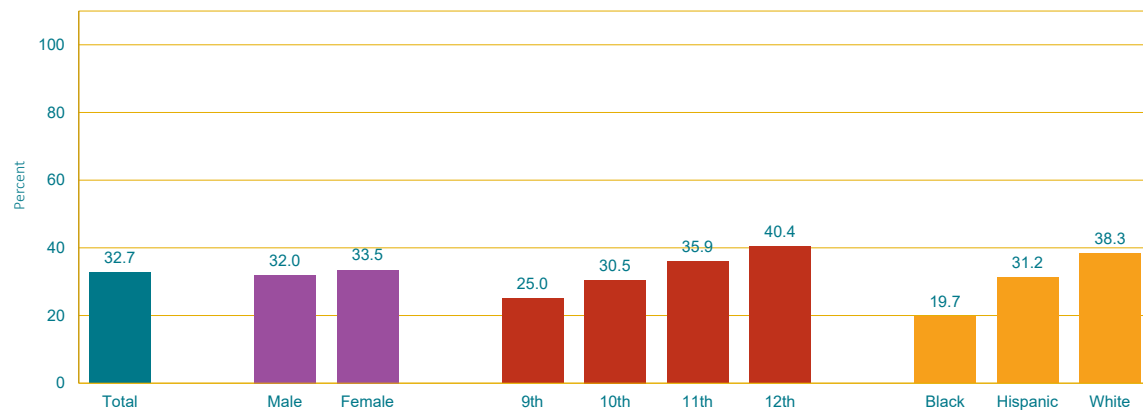
All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

11

Percentage of High School Students Who Currently Used an Electronic Vapor Product,* by Sex, Grade,† and Race/Ethnicity,† 2019



*Including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, and hookah pens [such as blu, NJOY, Vuse, MarkTen, Logic, Vapin Plus, eGo, and Halo], on at least 1 day during the 30 days before the survey

†10th > 9th, 11th > 9th, 11th > 10th, 12th > 9th, 12th > 10th, 12th > 11th; H > B, W > B, W > H (Based on t-test analysis, $p < 0.05$.)

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National Youth Risk Behavior Survey, 2019

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VAPING

Generally accepted by the public as a safer alternative to smoking.

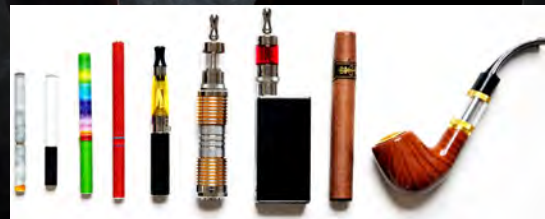
E-Cigarettes only became commercially available in the US in 2006

They are handheld battery-operated devices that heat liquids containing various ingredients such as nicotine and artificial flavorings. They can look like USB drives and are inconspicuous.

The biggest risk with E-Cigarettes is the lack of evidence...

8 out of 10 current youth users of e-cigarettes use flavored e-cigarettes, with fruit, mint, candy, and menthol flavors among the most commonly used.

Kids can order "e-juice" on the Internet. The legal age to buy is 18, but online stores don't always ask for proof of age



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It's healthy, until it's not...

14

VAPING

E-Vapor Associated Lung Injury (EVALI)

- As of February 18, 2020, a total of 2,807 hospitalized EVALI cases or deaths have been reported to CDC from all 50 states
- As of February 2020 there have been 68 confirmed deaths.
- Vitamin E acetate is strongly associated with EVALI, but other factors are involved.
- Pathophysiology is unknown, but it appears that vaping can cause sudden onset of inflammation in the lungs. Patients appear to have a severe pneumonia, but do not respond to antibiotics.

Patients who developed EVALI were primarily young males!

- 66% were male
- Median age was 24
- 15% were under 18 (youngest was 13 years old)
- 37% were 18-24
- 24% were 25-34
- 24% were >35

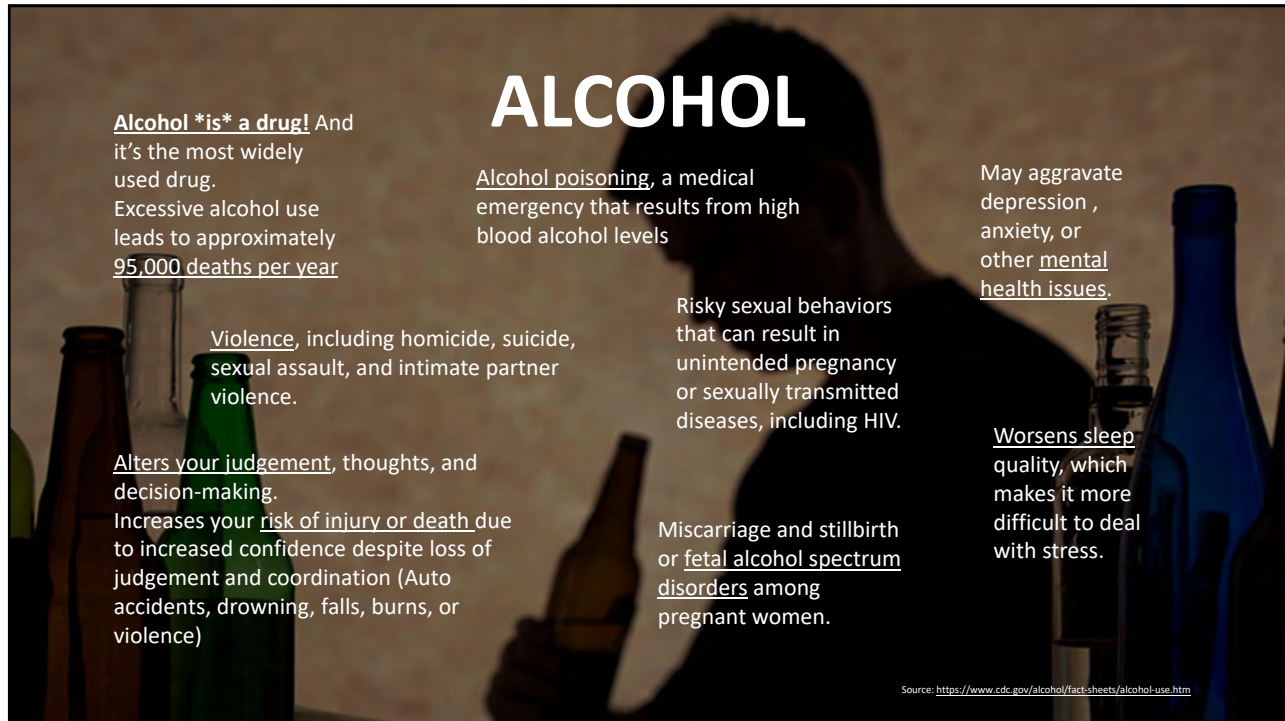
Source: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html#overview

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ALCOHOL



16



ALCOHOL

Alcohol *is* a drug! And it's the most widely used drug. Excessive alcohol use leads to approximately 95,000 deaths per year

Alcohol poisoning, a medical emergency that results from high blood alcohol levels

May aggravate depression , anxiety, or other mental health issues.

Violence, including homicide, suicide, sexual assault, and intimate partner violence.

Risky sexual behaviors that can result in unintended pregnancy or sexually transmitted diseases, including HIV.

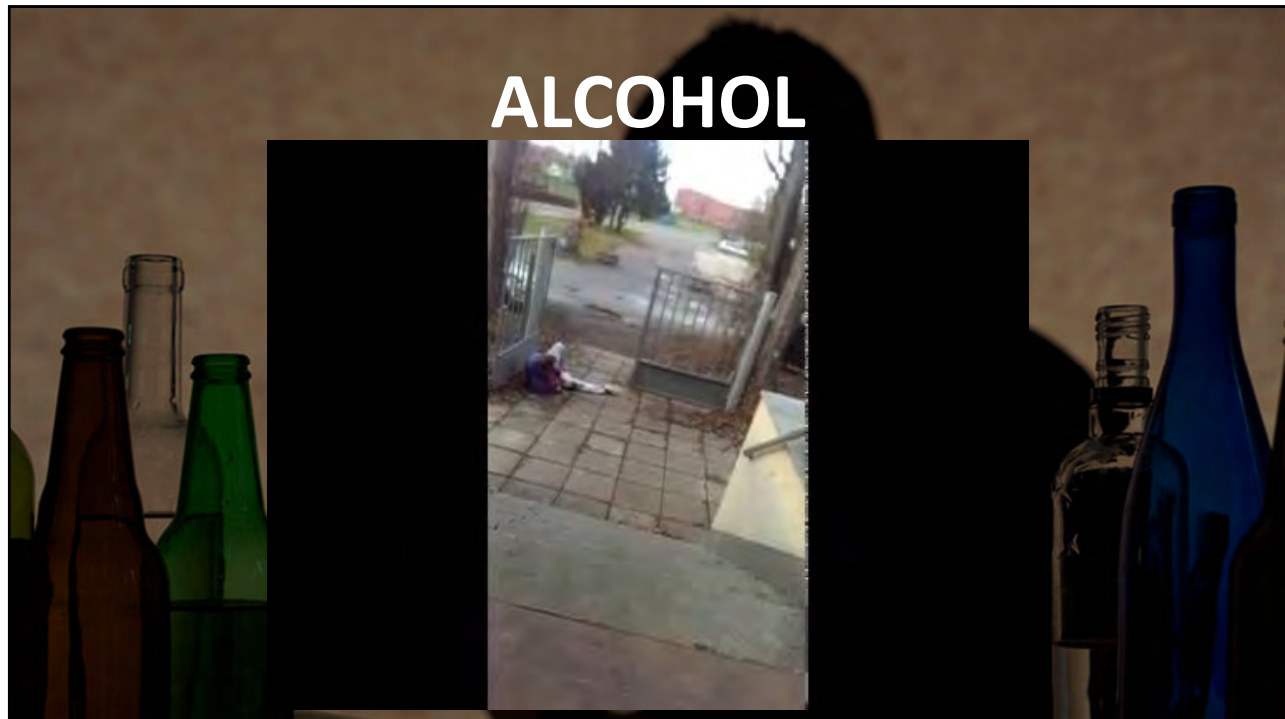
Worsens sleep quality, which makes it more difficult to deal with stress.

Alters your judgement, thoughts, and decision-making. Increases your risk of injury or death due to increased confidence despite loss of judgement and coordination (Auto accidents, drowning, falls, burns, or violence)


Miscarriage and stillbirth or fetal alcohol spectrum disorders among pregnant women.

Source: <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>

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ALCOHOL



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ALCOHOL

Long-term health consequences of alcohol:

- High blood pressure, heart disease, stroke, liver disease, and digestive problems.
- Cancer of the breast, mouth, throat, esophagus, liver, and colon.
- Learning and memory problems, including dementia and poor school performance.
- Weakening of the immune system, increasing the chances of getting sick.
- Alcohol use disorders, or alcohol dependence
- Social problems, including lost productivity, family problems, and unemployment.
- Mental health problems, including depression and anxiety.

Source: <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>

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ALCOHOL

People who should not drink alcohol:

- Younger than age 21.
- Pregnant or may be pregnant.
- Driving, planning to drive, or participating in other activities requiring skill, coordination, and alertness.
- Taking certain over-the-counter or prescription medications.
- People with certain medical conditions or taking certain medications that can adversely interact with alcohol.
- People with history of alcoholism, strong family history of alcoholism, or are unable to control the amount they drink

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ALCOHOL

Alcohol is one of the *few drugs* that can be fatal in withdrawal!

- With regular heavy drinking your body can form a physical dependency on the drug, in addition to a psychological one.
- Suddenly stopping drinking can be dangerous leading to sudden, dangerous increases in blood pressure, fast heart rate, agitation, confusion, shaking tremors, uncontrolled sweating, fever, seizures, tactile/ visual/ auditory hallucinations, and ultimately death in a number of cases.
- These symptoms indicate a condition call “Delirium Tremens” (DTs). DTs constitute a medical emergency that requires immediate medical attention.
- Patients will need hospitalization to reduce risk of death. Without medical treatment, 20% of patients with DTs will die as a result.

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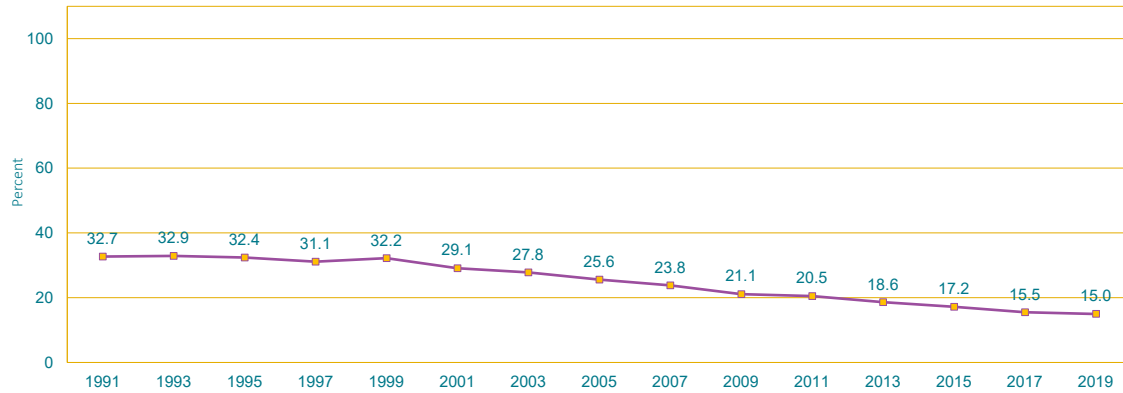
ALCOHOL

DELIRIUM TREMENS



22

Percentage of High School Students Who Had Their First Drink of Alcohol Before Age 13 Years,* 1991-2019†



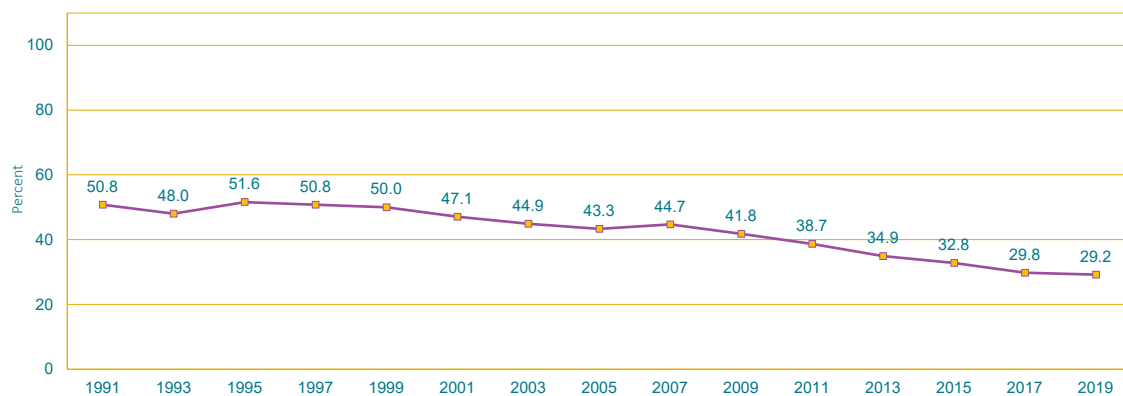
*Other than a few sips

†Decreased 1991-2019, no change 1991-1999, decreased 1999-2019 [Based on linear and quadratic trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$). Significant linear trends (if present) across all available years are described first followed by linear changes in each segment of significant quadratic trends (if present).] This graph contains weighted results.

National Youth Risk Behavior Surveys, 1991-2019

23

Percentage of High School Students Who Currently Drank Alcohol,* 1991-2019†



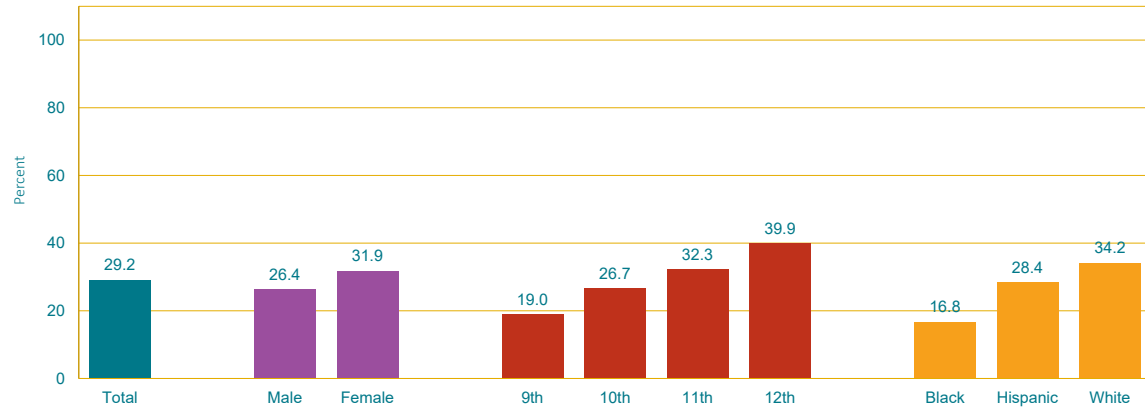
*At least one drink of alcohol, on at least 1 day during the 30 days before the survey

†Decreased 1991-2019, decreased 1991-2007, decreased 2007-2019 [Based on linear and quadratic trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$). Significant linear trends (if present) across all available years are described first followed by linear changes in each segment of significant quadratic trends (if present).] This graph contains weighted results.

National Youth Risk Behavior Surveys, 1991-2019

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Percentage of High School Students Who Currently Drank Alcohol,* by Sex,[†] Grade,[‡] and Race/Ethnicity,[‡]
2019



*At least one drink of alcohol, on at least 1 day during the 30 days before the survey

[†]F > M; 10th > 9th, 11th > 9th, 11th > 10th, 12th > 9th, 12th > 10th, 12th > 11th; H > B, W > H (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

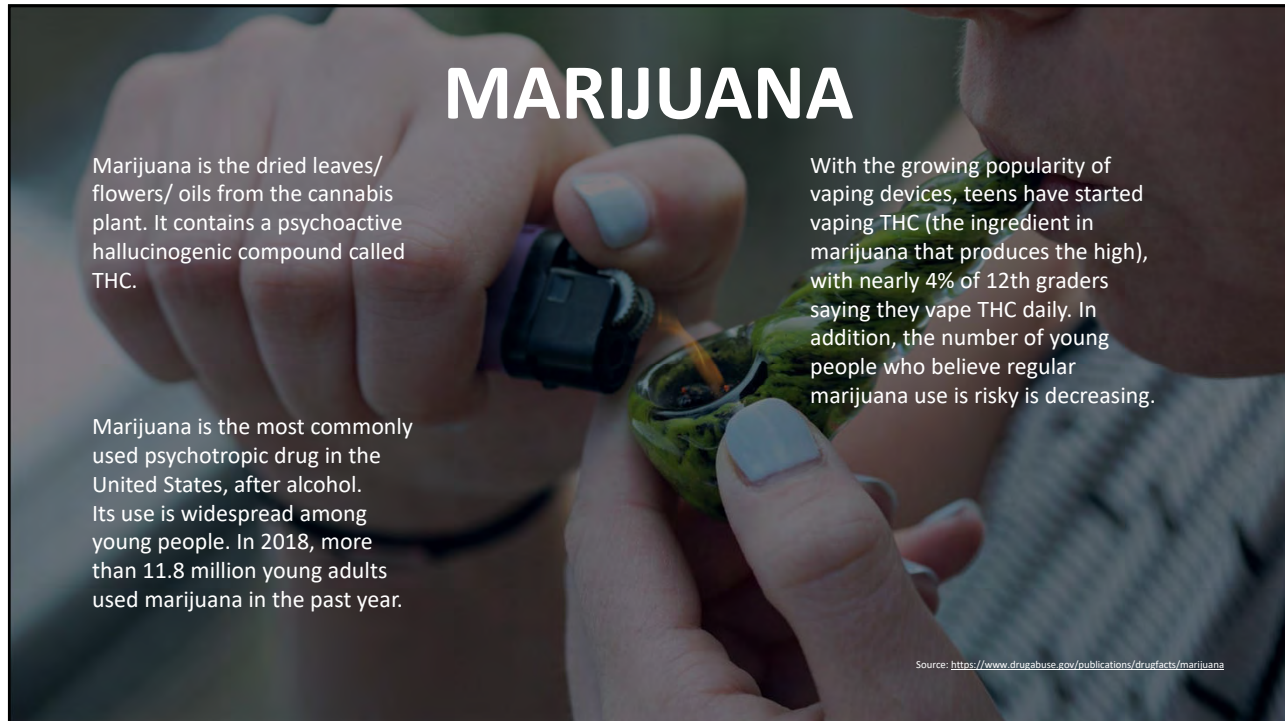
This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

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MARIJUANA

Marijuana is the dried leaves/ flowers/ oils from the cannabis plant. It contains a psychoactive hallucinogenic compound called THC.

Marijuana is the most commonly used psychotropic drug in the United States, after alcohol. Its use is widespread among young people. In 2018, more than 11.8 million young adults used marijuana in the past year.

With the growing popularity of vaping devices, teens have started vaping THC (the ingredient in marijuana that produces the high), with nearly 4% of 12th graders saying they vape THC daily. In addition, the number of young people who believe regular marijuana use is risky is decreasing.

Source: <https://www.drugabuse.gov/publications/drugfacts/marijuana>

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MARIJUANA

Long term effects

Marijuana can be addictive.

Smoking/ Vaping leads to increased risk of lung damage, including COPD, lung infections (Pneumonia, Flu, Covid19), and lung cancer.

May cause hallucinations, delusions, or psychosis in high doses

Impairs memory, learning and cognition, Aggravates anxiety and causes mood changes, Impairs coordination

Intense nausea and vomiting. Regular, long-term marijuana use can lead to some people to develop *Cannabinoid Hyperemesis Syndrome*. This causes users to experience regular cycles of severe nausea, vomiting, and dehydration, sometimes requiring emergency medical attention.

Marijuana also affects brain development. When people begin using marijuana as teenagers, the drug may impair thinking, memory, and learning functions and affect how the brain builds connections between the areas necessary for these functions.

Source: <https://www.drugabuse.gov/publications/drugfacts/marijuana>

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MARIJUANA

The Teen Brain

People who begin using marijuana before age 18 are 4-7 times more likely than adults to develop a marijuana use disorder.

THC acts on specific brain cell receptors that ordinarily react to natural THC-like chemicals. These natural chemicals play a role in normal brain development and function.

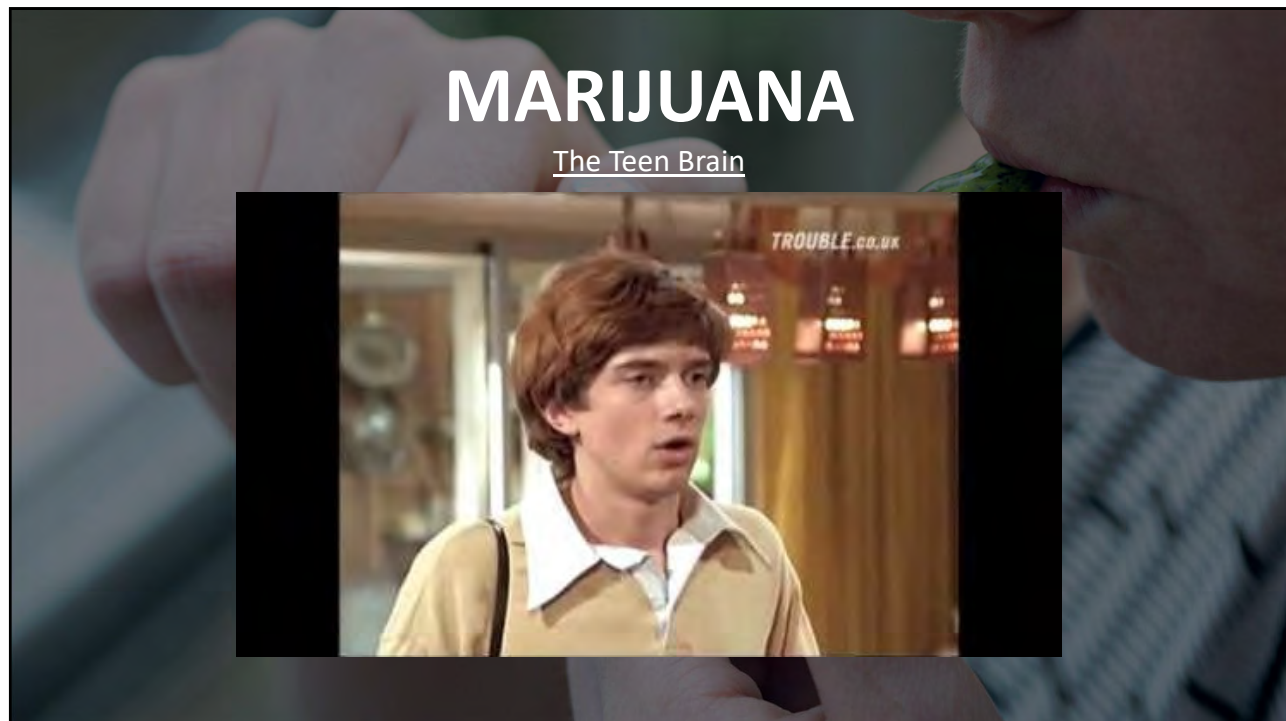
A study from New Zealand conducted in part by researchers at Duke University showed that people who started smoking marijuana heavily in their teens and had an ongoing marijuana use disorder lost an average of 8 IQ points between ages 13 and 38.

What's worse, research shows that marijuana use can have permanent effects on the developing brain when use begins in adolescence, especially with regular or heavy use.

The lost mental abilities didn't fully return in those who quit marijuana as adults. Those who started smoking marijuana as adults didn't show notable IQ declines.


Source: <https://www.drugabuse.gov/publications/drugfacts/marijuana> <https://www.cdc.gov/marijuana/factsheets/teens.htm>

29



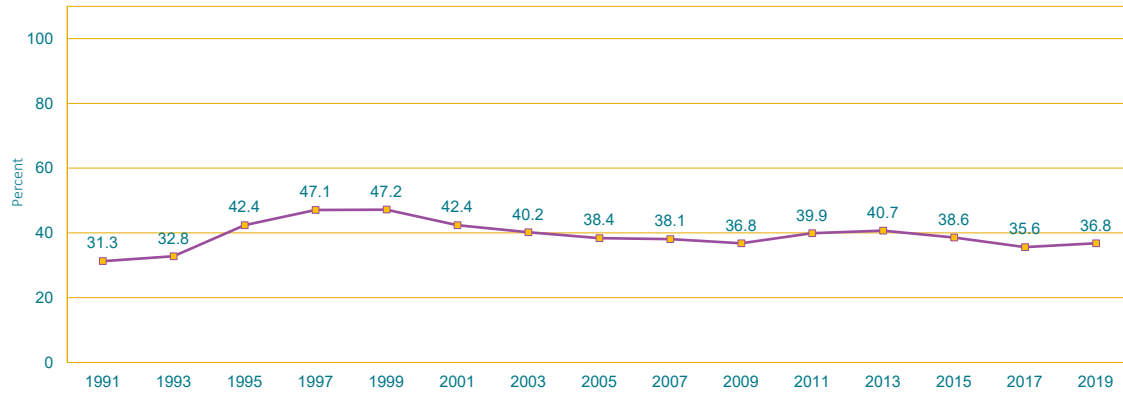
MARIJUANA

The Teen Brain



30

Percentage of High School Students Who Ever Used Marijuana,* 1991-2019[†]



*One or more times during their life

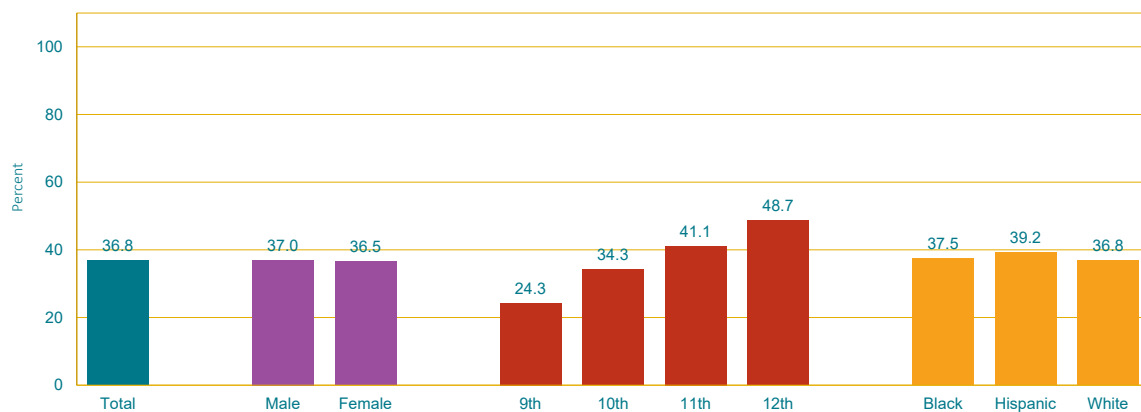
[†]Increased, 1991-1997, decreased, 1997-2019 [Based on linear and quadratic trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$). Significant linear trends (if present) across all available years are described first followed by linear changes in each segment of significant quadratic trends (if present).]

This graph contains weighted results.

National Youth Risk Behavior Surveys, 1991-2019

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Percentage of High School Students Who Ever Used Marijuana,* by Sex, Grade,[†] and Race/Ethnicity, 2019



*One or more times during their life

[†]10th > 9th, 11th > 9th, 11th > 10th, 12th > 9th, 12th > 10th, 12th > 11th (Based on t-test analysis, $p < 0.05$.)

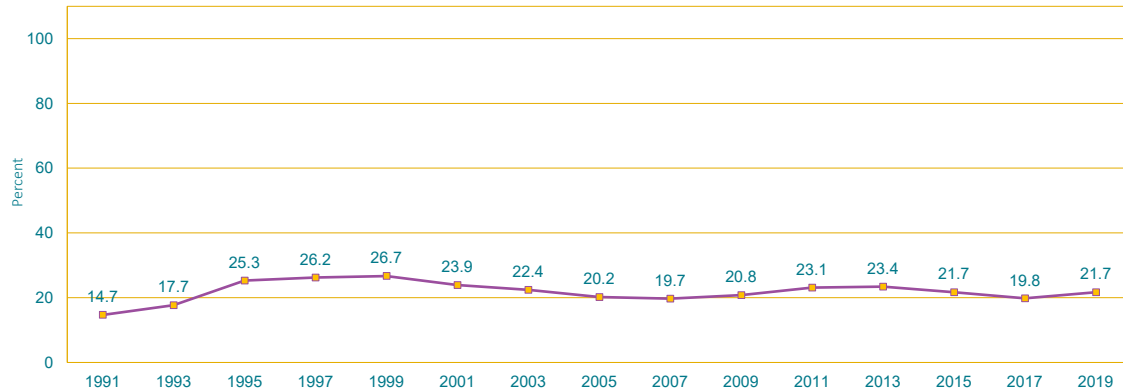
All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

32

Percentage of High School Students Who Currently Used Marijuana,* 1991-2019[†]



*One or more times during the 30 days before the survey

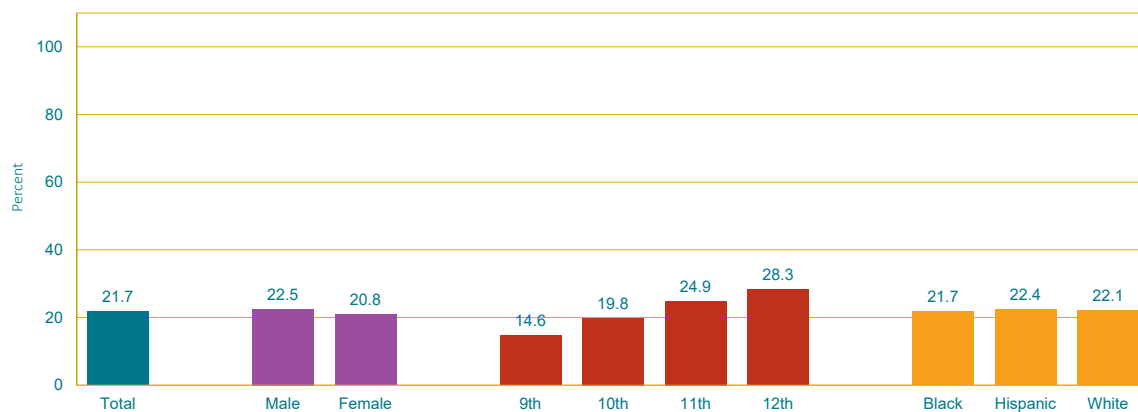
[†]Increased, 1991-1995, decreased, 1995-2019 [Based on linear and quadratic trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$). Significant linear trends (if present) across all available years are described first followed by linear changes in each segment of significant quadratic trends (if present).]

This graph contains weighted results.

National Youth Risk Behavior Surveys, 1991-2019

33

Percentage of High School Students Who Currently Used Marijuana,* by Sex, Grade,[†] and Race/Ethnicity, 2019



*One or more times during the 30 days before the survey

[†]10th > 9th, 11th > 9th, 11th > 10th, 12th > 9th, 12th > 10th, 12th > 11th (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

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COCAINE

Cocaine is a powerfully addictive stimulant drug made from the leaves of the coca plant native to South America.

Cocaine is typically snorted into the nose, but can be smoked or injected.

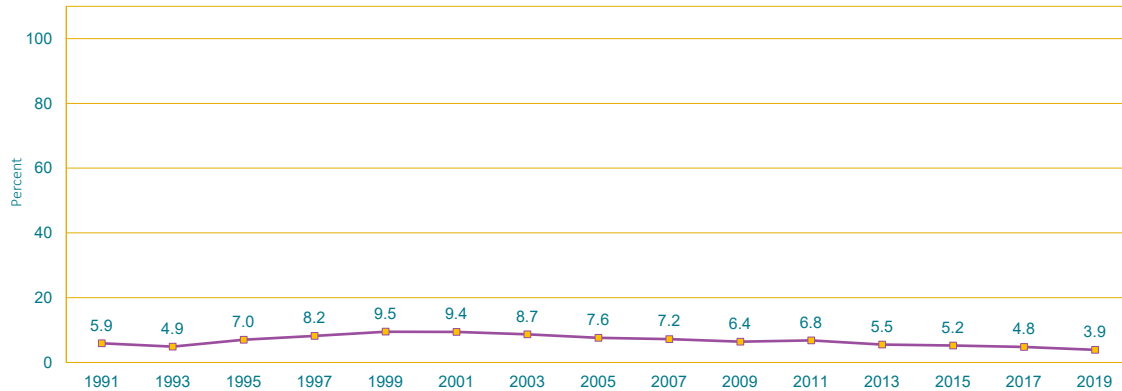
Cocaine use can cause a host of health issues, including increased blood pressure, rapid pulse, increased body temperature, headache, abdominal pain, nausea, loss of smell, nosebleeds, nasal damage and trouble swallowing from snorting; infection and death of bowel tissue from decreased blood flow; poor nutrition and weight loss; lung damage from smoking. insomnia, restlessness, anxiety, erratic and violent behavior, panic attacks, paranoia, psychosis, heart rhythm problems, heart attack, stroke, seizure, coma.

The biggest risk with cocaine use is heart attack and death.

Source: <https://www.drugabuse.gov/drug-topics/commonly-used-drugs/chart#cocaine>

36

Percentage of High School Students Who Ever Used Cocaine,* 1991-2019†



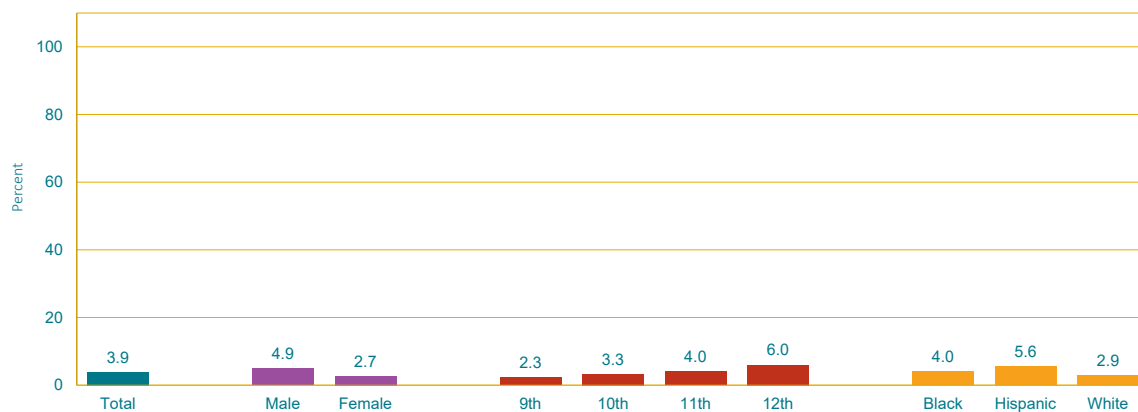
*Any form of cocaine, including powder, crack, or freebase, one or more times during their life

†Decreased 1991-2019, increased 1991-2001, decreased 2001-2019 [Based on linear and quadratic trend analyses using logistic regression models controlling for sex, race/ethnicity, and grade ($p < 0.05$). Significant linear trends (if present) across all available years are described first followed by linear changes in each segment of significant quadratic trends (if present).] This graph contains weighted results.

National Youth Risk Behavior Surveys, 1991-2019

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Percentage of High School Students Who Ever Used Cocaine,* by Sex,† Grade,† and Race/Ethnicity,† 2019



*Any form of cocaine, including powder, crack, or freebase, one or more times during their life

†M > F; 11th > 9th, 12th > 9th, 12th > 10th, 12th > 11th; H > W (Based on t-test analysis, $p < 0.05$.)

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This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

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OPIATES

Opioids are highly addictive, but the biggest concern with opioids is how easily it is for people to overdose with them, especially when using them with other drugs like alcohol, stimulants or antianxiety medications.

Although opioids are prescribed for pain relief, they ironically can actually *increase* a person's sensitivity to pain over time, leading to higher doses.

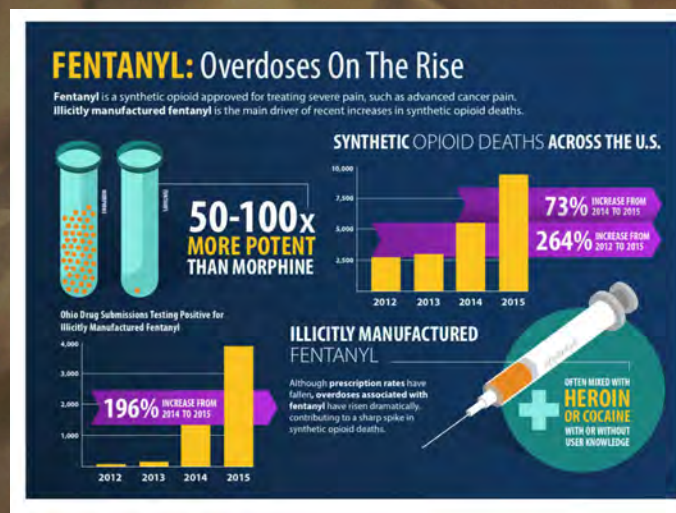
Overdoses are deadly, opioids will slow a person's heart rate and respiratory rate, causing them to stop breathing. This can occur with any opioid, but lately it's been occurring more often with fentanyl which is a newer, more potent opioid.

Naltrexone is a medication that you can get from the pharmacy to save someone from an overdose.

Source: <https://www.drugabuse.gov/drug-topics/commonly-used-drugs/charts/prescription-opioids>

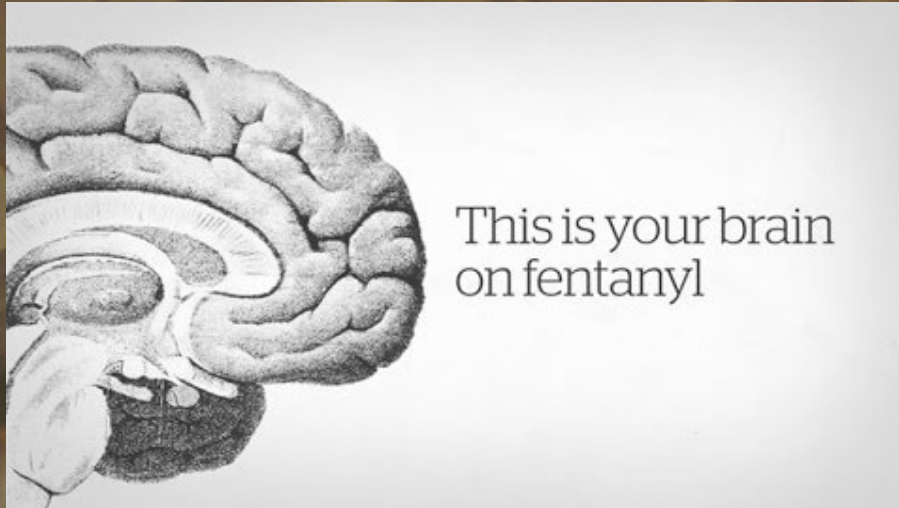
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OPIATES



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OPIATES



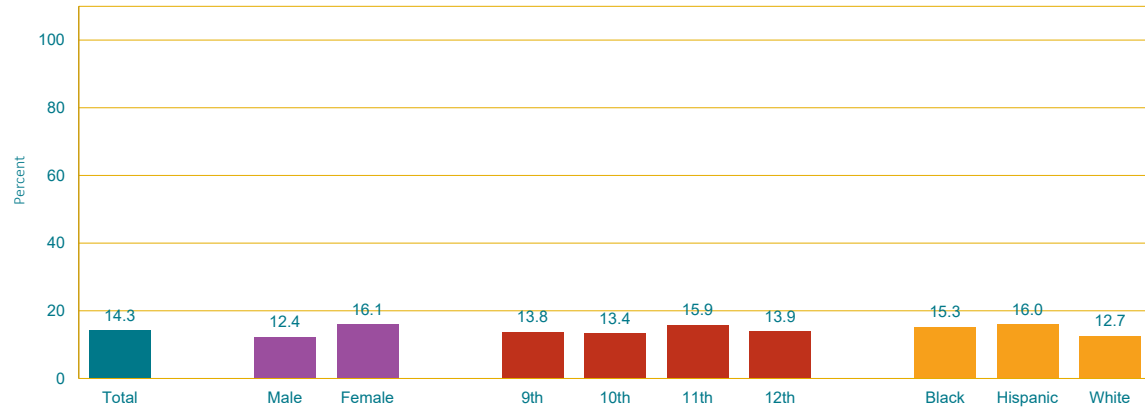
43

OPIATES



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Percentage of High School Students Who Ever Took Prescription Pain Medicine Without a Doctor's Prescription or Differently Than How a Doctor Told Them to Use It,* by Sex,[†] Grade, and Race/Ethnicity, 2019



*Counting drugs such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet, one or more times during their life

[†]F > M (Based on t-test analysis, $p < 0.05$.)

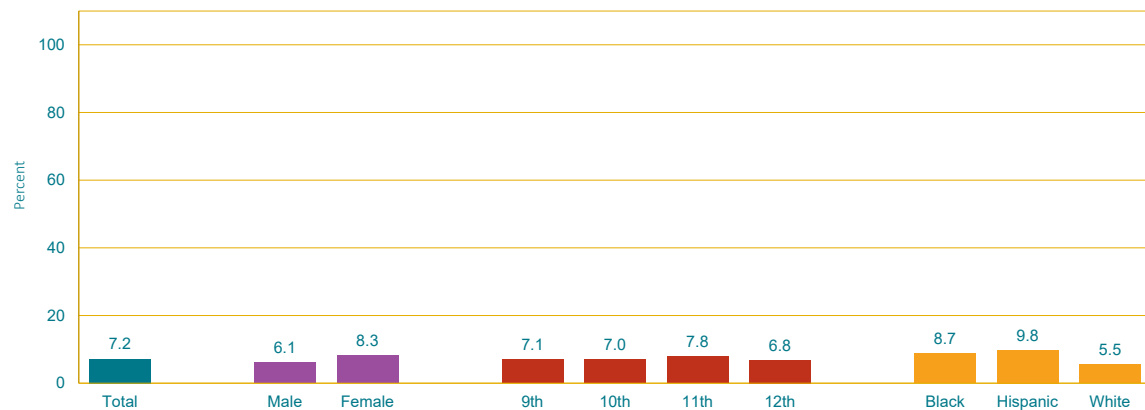
All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

45

Percentage of High School Students Who Currently Took Prescription Pain Medicine Without a Doctor's Prescription or Differently Than How a Doctor Told Them to Use It,* by Sex,[†] Grade, and Race/Ethnicity,[‡] 2019



*One or more times during the 30 days before the survey

[†]F > M; B > W, H > W (Based on t-test analysis, $p < 0.05$.)

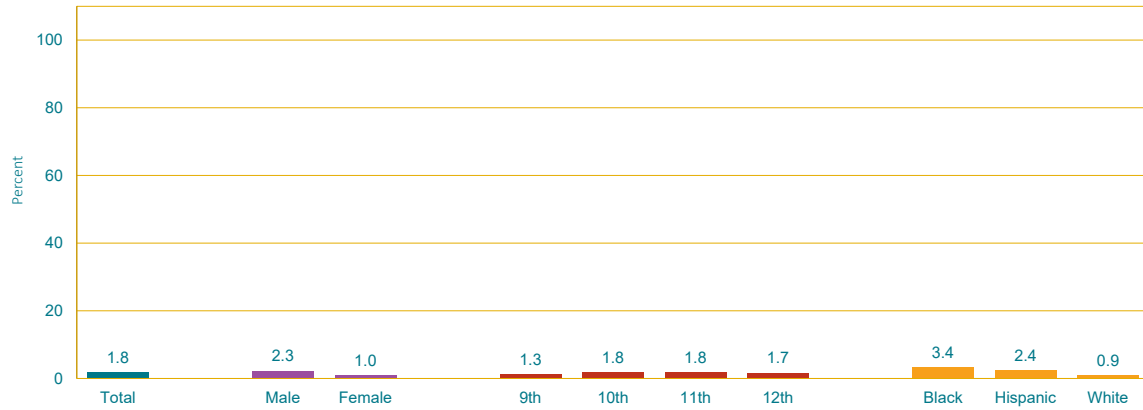
All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.

This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

46

Percentage of High School Students Who Ever Used Heroin,* by Sex,[†] Grade, and Race/Ethnicity,[†] 2019



*Also called "smack," "junk," or "China White," one or more times during their life

[†]M > F; B > W, H > W (Based on t-test analysis, $p < 0.05$.)

All Hispanic students are included in the Hispanic category. All other races are non-Hispanic.
This graph contains weighted results.

National Youth Risk Behavior Survey, 2019

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INHALANTS

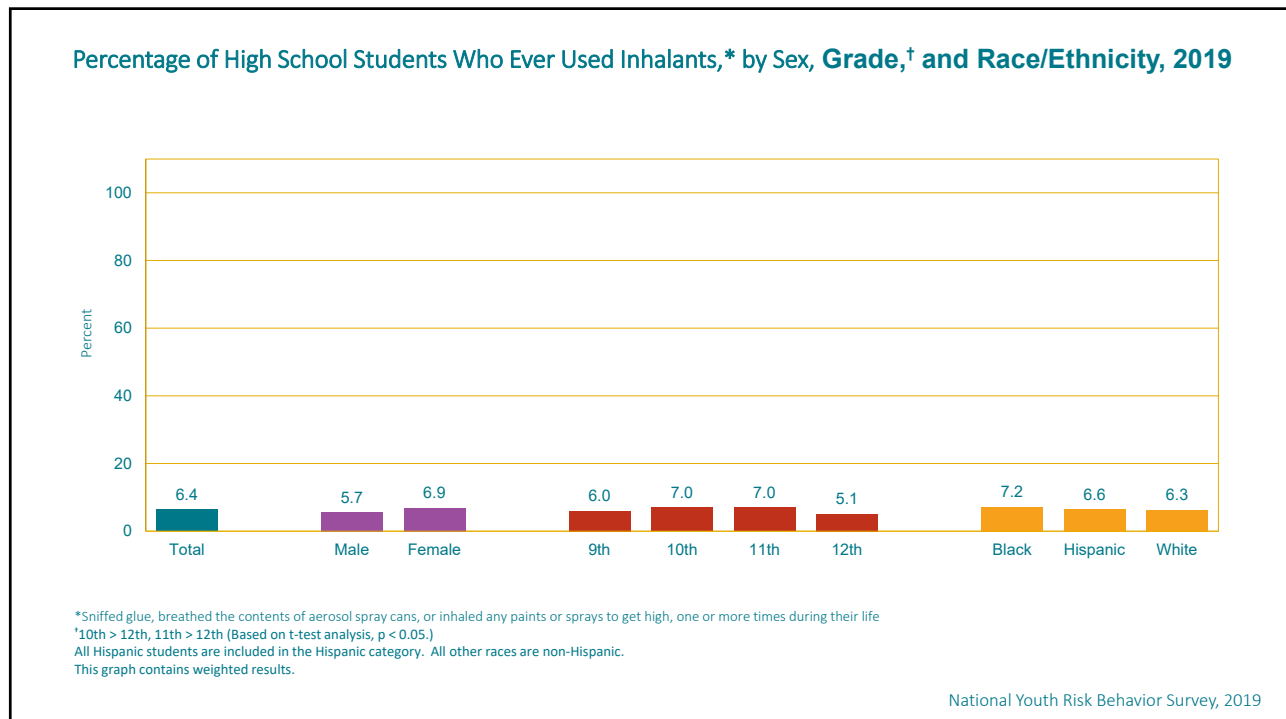
Not all drugs look like drugs.

Paint thinners, degreasers, dry-cleaning fluids, gasoline, lighter fluids, correction fluids, permanent markers, electronics cleaners, glue, spray paint, hair or deodorant sprays, fabric protector sprays, aerosol computer cleaning products, vegetable oil sprays, butane lighters, propane tanks, whipped cream aerosol containers, refrigerant gases, ether, chloroform, halothane, nitrous oxide.


Confusion; nausea; slurred speech; lack of coordination; euphoria; dizziness; drowsiness; disinhibition, lightheadedness, hallucinations/delusions; headaches; sudden sniffing death due to heart failure (from butane, propane, and other chemicals in aerosols); death from asphyxiation, suffocation, convulsions or seizures, coma, or choking.



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 From the American Academy of Pediatrics

<https://healthychildren.org/English/ages-stages/teen/substance-abuse/Pages/default.aspx>

<https://teens.drugabuse.gov/teens>

<https://drugfree.org/>

 **teen link**
1.866.TEENLINK(833.6546)

 **StartTalkingNow.org**

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