

Current Drug Trends 2015

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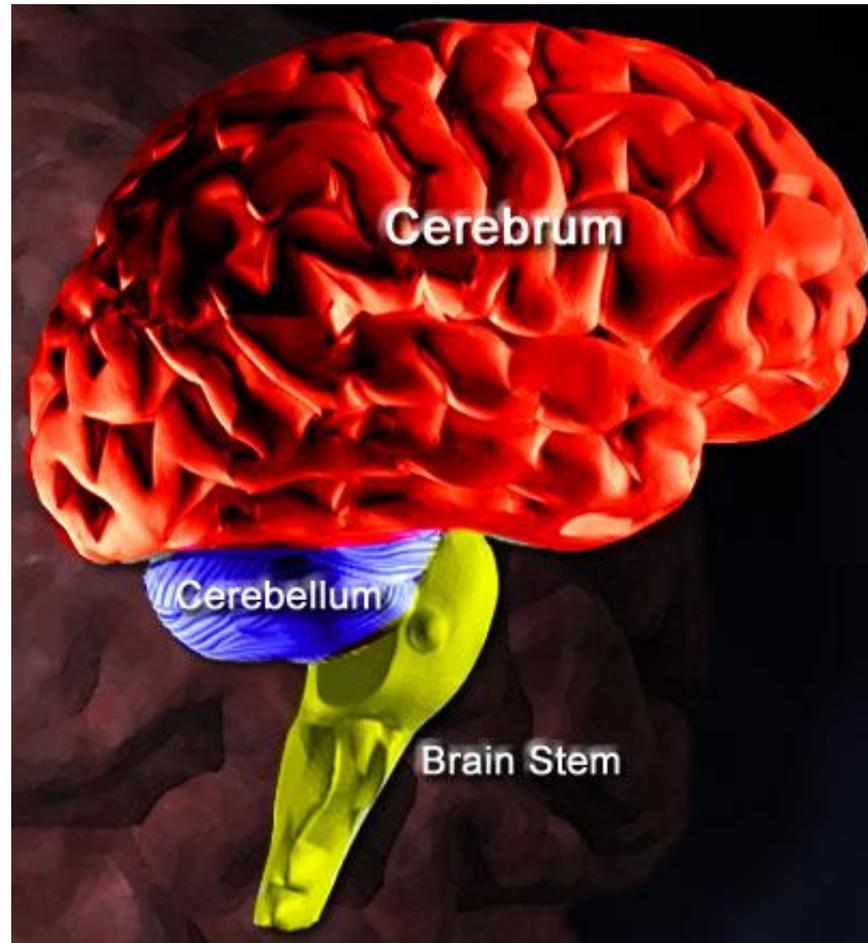
What causes teen to experiment/use drugs?

Low perception of risk and harm

Availability: easily obtained from home or friends

Acceptability: social norms dictate that “everyone is doing it”

Drugs target the brain.



People start using drugs for a variety of reasons:

- To feel good; seeking pleasure
- To do better; school, sports, lose weight
- To feel better; relieve anxiety, depression, stress
- Curiosity, peer pressure

Teens are very vulnerable to drug abuse because of the strong influence of peer pressure and wanting to fit in.

Because the prefrontal cortex (the brain's brake system) isn't fully developed until the age of 25, they are more likely to engage in impulsive, risky behavior to impress friends or demonstrate independence from parental and/or societal rules.

Drugs, Brains, and Behavior: The Science of Addiction, NIDA

Because their brains are not fully developed, they are highly susceptible to addiction, in fact, most chemically dependent adults started using in their teens.

One in five teens that abuse drugs or alcohol will become dependent on them.

This three pound mass is made up of three main parts:

1. Stem- basic, involuntary functions
2. Cerebral cortex-senses, thinking
3. Limbic-the brain's reward circuit



The cerebral cortex is divided into areas to control specific functions. One area processes information from our senses allowing us to see, hear.

The front part, or the frontal cortex, is the thinking center. It controls our ability to think, plan, solve problems, make decisions, and is not fully developed until the age of 25.

How does someone get addicted to drugs?

Humans have the limbic/reward system for survival. When we eat or have sex, endorphins are released in the brain. Natural pleasures in life are necessary so we can survive, procreate, react to danger.

The first time someone drinks or uses an addictive drug, up to ten times the amount of endorphins are released in the brain.

How do parts of the brain communicate?

To send a message, a brain cell releases a chemical, or neurotransmitter, into the space (synapsis) between it and the next cell. The neurotransmitter crosses the synapse and attaches to receptor cells. This causes changes in the receiving cell, the message is delivered. The neurotransmitter is the mouth, and the receptors are the ears.

Drugs tap into this communication and interfere with the way neurons normally send, receive and process information.

Drugs are chemicals that affect the brain by interfering with the way neurons send, receive, and process information. They mimic neurotransmitters, and this similarity in structure fools receptors and allows the drugs to attach onto and activate the neurons.

Some drugs, such as marijuana and opioids, mimic the brain's own chemicals, but they don't activate neurons in the same way as a natural neurotransmitter, leading to abnormal messages being transmitted.

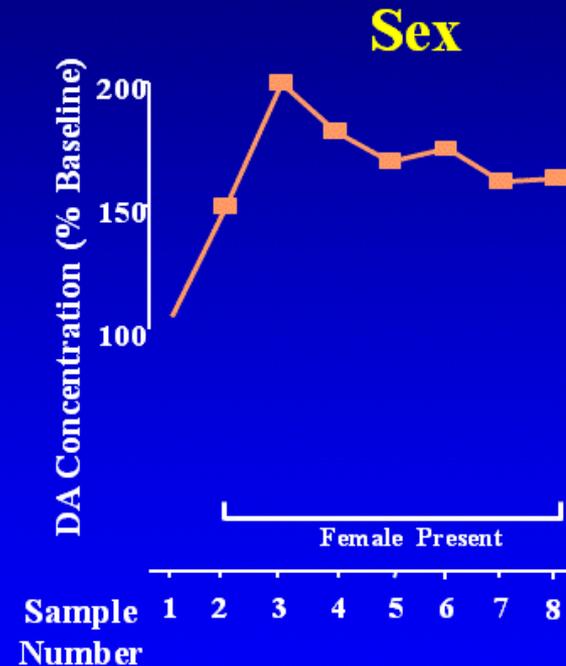
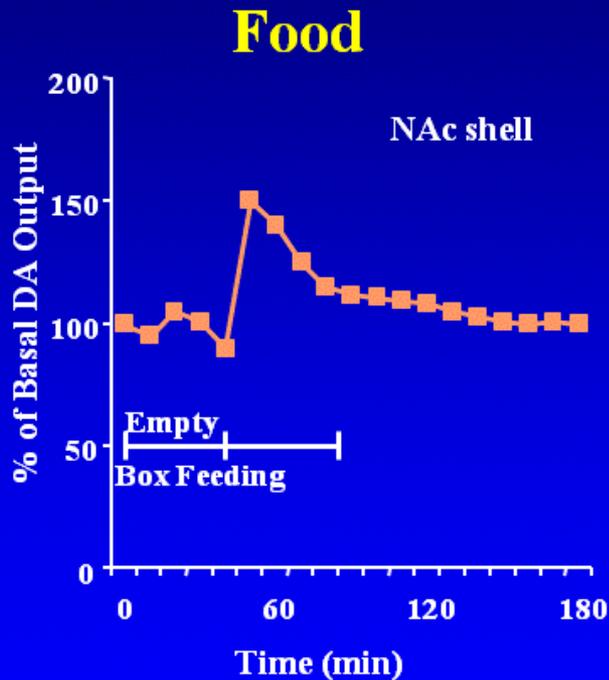
Others, such as amphetamines and cocaine, cause the neurons to release abnormally large amounts of neurotransmitters or prevent the normal recycling of these brain chemicals. This disrupts communication channels.

Drugs target the brain's reward (limbic) system by flooding the circuit with dopamine. Dopamine is a neurotransmitter present in the regions of the brain that regulate movement, emotion, motivation, and feelings of pleasure. When activated at normal levels, this system rewards natural behaviors.

Overstimulating the system with drugs produces euphoric effects which strongly reinforce the behavior of drug use, teaching the user to repeat it.

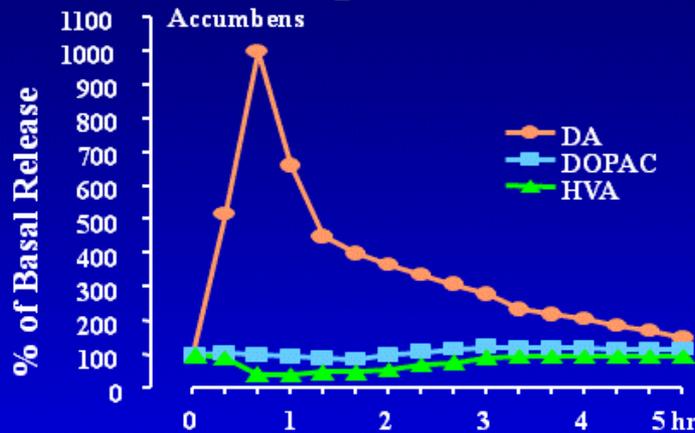
Our brains are wired to ensure that we repeat life sustaining activities by associating those activities with pleasure or reward. When this circuit is activated, the brain notes that something important is happening and needs to be remembered, teaching us to repeat the behavior without even thinking about it. Because drugs of abuse stimulate this same circuit, we learn to use drugs in the same way.

Natural Rewards Elevate Dopamine Levels

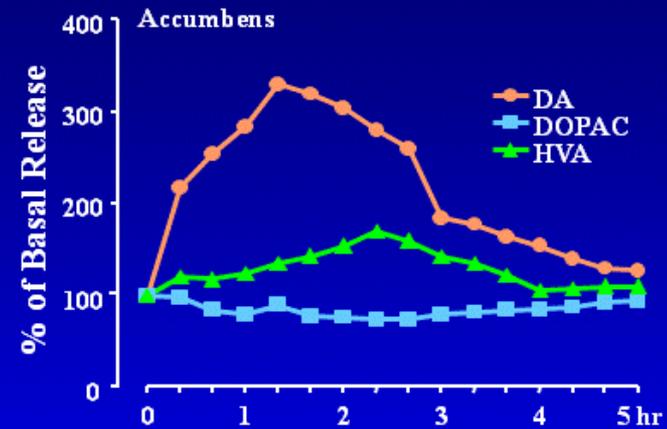


Effects of Drugs on Dopamine Release

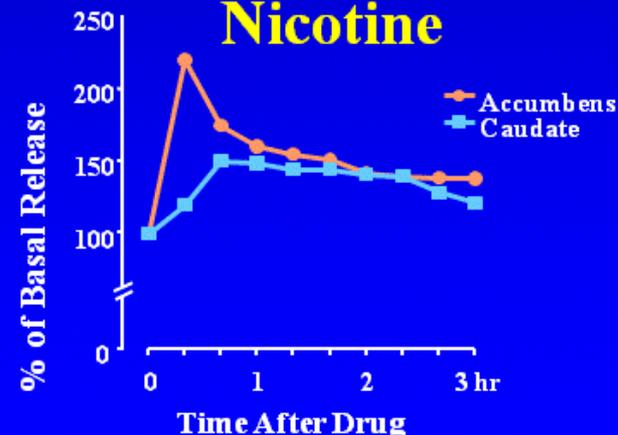
Amphetamine



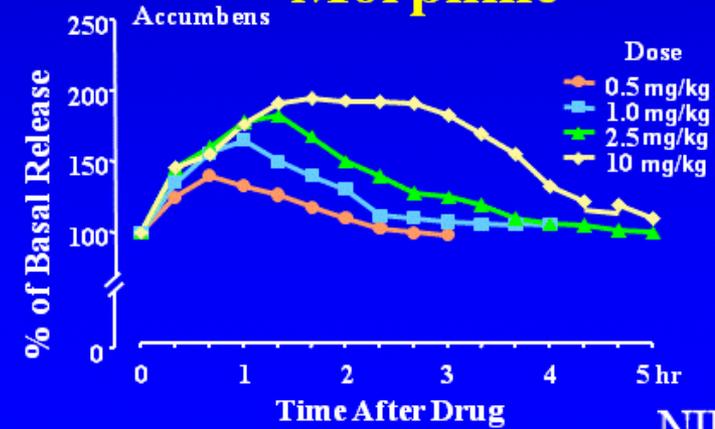
Cocaine



Nicotine



Morphine



Drugs can release 2-10 times the amount of dopamine that natural rewards do and their effects last much longer than what is released for food or sex. Drugs shout in a microphone, natural dopamine whisper in your ear!

The resulting effects on the brain's pleasure circuit dwarf those produced by naturally rewarding behaviors. The effect of this powerful reward strongly motivates people to take drugs again and again.

This is why scientists sometimes say that drug abuse is something we learn to do very, very well! The brain adjusts to the overwhelming surges in dopamine by producing less or reducing the number of receptors that can receive signals. Dopamine's impact on the reward circuit of someone who abuses drugs becomes abnormally low, and that person's ability to experience any pleasure is reduced.

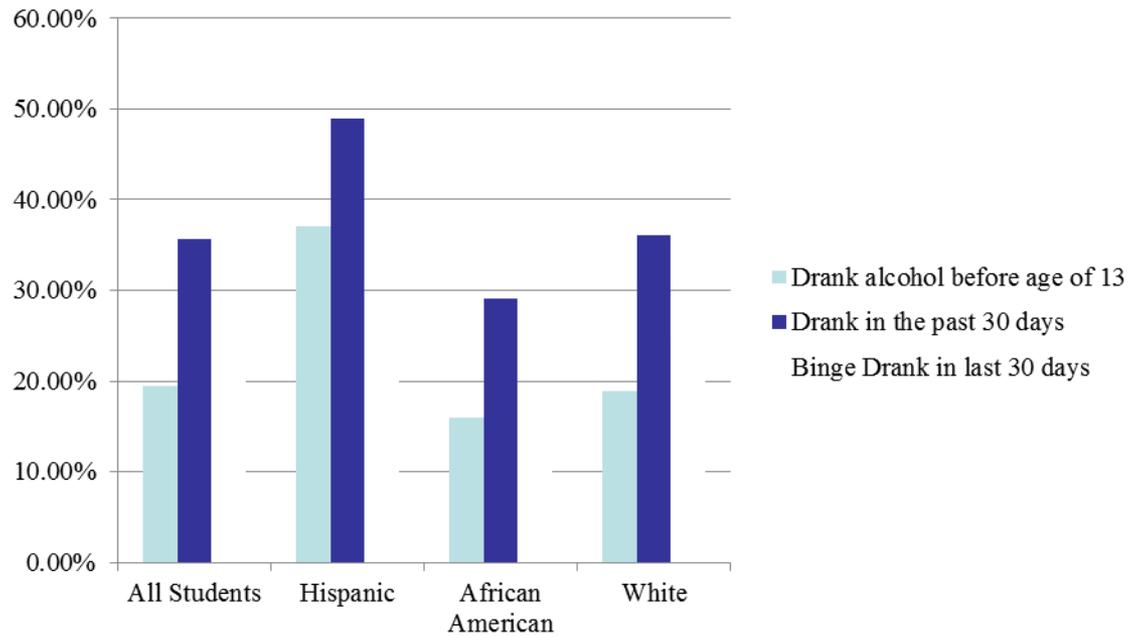
Drugs, Brains, and Behavior: The Science of Addiction. NIDA

What are the most abused substances by teens?

1. Alcohol
2. Tobacco
3. Marijuana
4. Prescription Drugs
5. Synthetics



Obviously the substances that are legal for adults are the most abused.



Missouri Department of Health

When people continue to use drugs, the brain adjusts to the overwhelming surges in dopamine by producing less dopamine or reducing the number of receptors that can receive signals.

Eventually people that abuse drugs are unable to enjoy things that were previously pleasurable. The person needs to keep taking drugs again and again just to try to bring the dopamine function back to normal, which obviously exasperates the problem. The person will often need larger amounts of the drug to produce the familiar dopamine high...tolerance.

Fortunately, addiction is a treatable disease. Most people will need professional help to recover. For information on recovery visit MO Recovery Network, www.morecovery.org.

Drugs, Brains and Behavior: The Science of Addiction. NIDA

Table 2. Percentage of Substance Users in Missouri and the United States

	Missouri ⁴		United States ⁵	
	Lifetime	30-day	Lifetime	30-day
Alcohol	33.3%	13.9%	32.4%	12.9%
Electronic Cigarettes	16.0%	10.2%	n/a	n/a
Cigarettes	19.1%	8.1%	17.4%	6.6%
Marijuana	15.2%	7.6%	17.0%	7.2%
Hookah	11.3%	7.3%	n/a	n/a
Chewing Tobacco	9.8%	5.0%	6.4%	2.1%
Prescription Drugs	7.5%	3.7%	n/a	n/a
Over-the-Counter Meds	2.9%	1.6%	n/a	n/a
Inhalants	2.9%	1.1%	6.5%	0.8%
Synthetic Drugs	3.2%	0.8%	n/a	n/a
Cocaine	1.1%	n/a	1.1%	n/a
Heroin	0.3%	n/a	0.2%	n/a
Hallucinogens	1.9%	n/a	3.3%	0.6%
Methamphetamine	0.5%	n/a	0.6%	0.1%
Club Drugs	1.6%	n/a	n/a	n/a
Steroids	0.9%	n/a	n/a	n/a

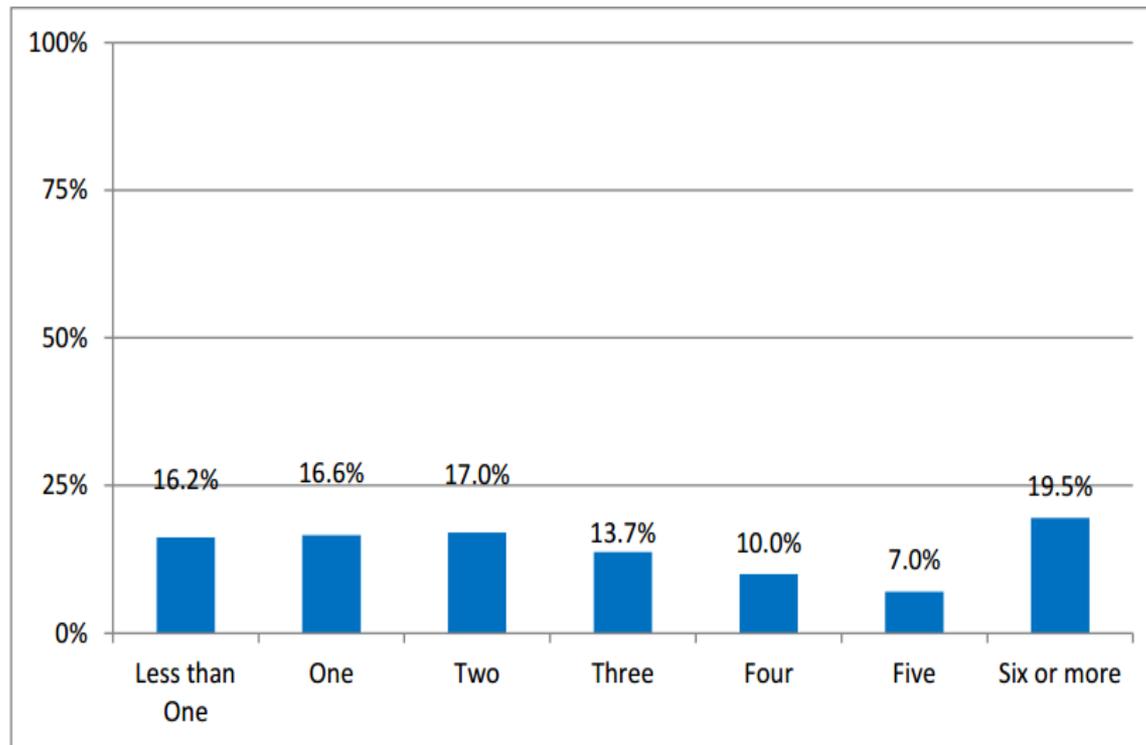
As you can see, most youth view alcohol and cigarettes as very or sort of easy to obtain.

Table 5. Youth Perception of Substance Availability

	Very Easy	Sort of Easy	Sort of Hard	Very Hard
Cigarettes	25.6%	20.7%	17.5%	36.2%
Alcohol	27.1%	23.9%	18.0%	30.9%
Marijuana	19.3%	14.8%	14.3%	51.7%
Over-the-Counter Drugs	32.9%	19.6%	15.4%	32.1%
Prescription Drugs	12.9%	15.7%	21.8%	49.6%
Other Illegal Drugs¹	5.7%	8.3%	15.9%	70.1%
Synthetic Drugs²	12.5%	13.1%	19.7%	54.8%

Almost half (44.8%) of students reporting past month use also reported having five or more drinks (binge drinking) in the past two weeks. Taken with Figure 13, this indicates that while most youth only drink 1-2 days a month, when they do drink many of them drink heavily.

Figure 15. Average Number of Drinks Consumed (on Days That Alcohol Was Used) Among Youth Who Consumed Alcohol in the Past Month



n = 9,228

Teen drinking can lead to:

- car accidents (more than a third of fatalities)
- violent behavior
- alcohol poisoning
- Alcohol dependence as an adult
- unprotected sex
- having multiple sex partners
- suicide attempts
- poor academic performance
- experimentation with other drugs

Glamorized by pop culture and music.

<https://www.youtube.com/watch?v=yJu0U8oVYbE>

Resources for educators and parents to prevent UAD:



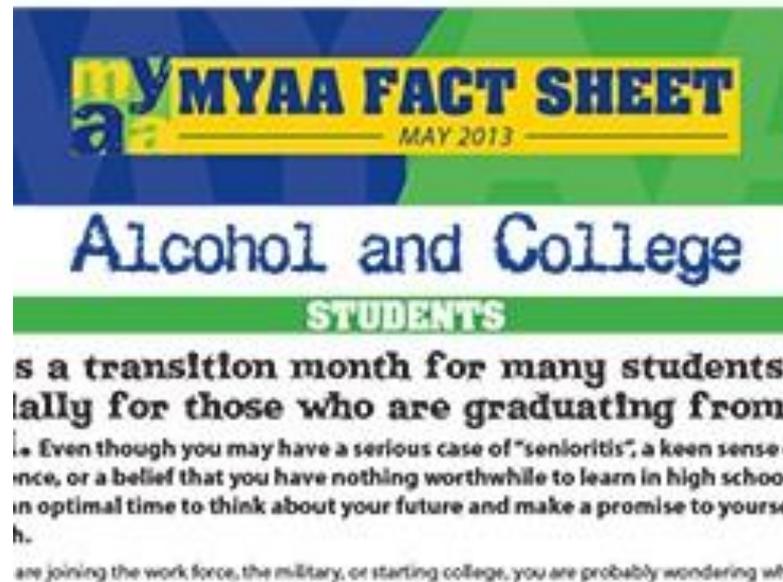
Parents need to have conversations early and often to be effective.

<http://www.samhsa.gov/underage-drinking>

ACT Missouri's Fact Sheet Series

You can download these from our website. There is information for students, parents and educators.

<https://www.actmissouri.org/free-downloads-resources/>



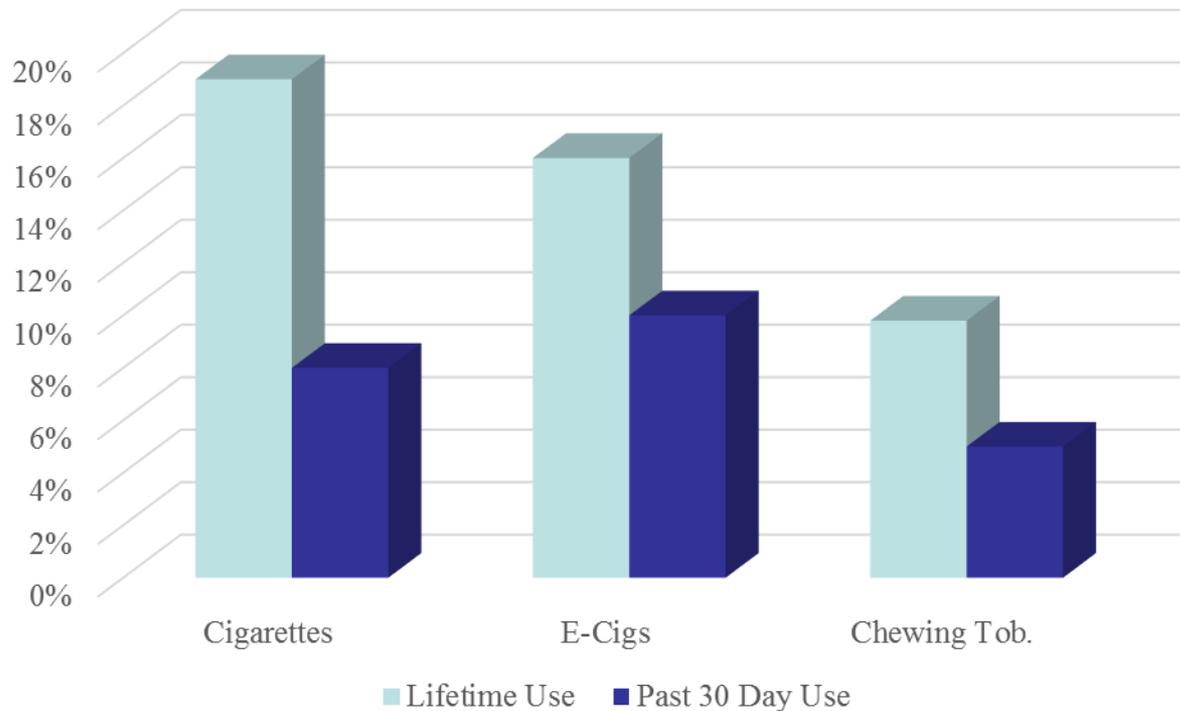
Partnership for Drug Free Kids

<http://www.drugfree.org/get-help/helpline/>

Helpline number is 855- DRUGFREE

Tobacco and E-Cigarettes

Chart Title



E-Cigs were not surveyed in 2012 but have surpassed cigarettes in past 30 day use.

E-Cigs are small and easy to conceal, and some look like pens or lip balm. The “juice” comes in flavors that are very appealing to young people, such as cotton candy and fruit punch. This juice is called “Catcha Me Latte”.



They are marketed as a safe alternative to smoking and as a cessation device. Most people just switch to vaping instead of smoking, and the juice contains the addictive chemical nicotine.

A growing trend now is to vape marijuana. They extract “wax” from marijuana and use it in a ENDS. It is super concentrated THC. One school counselor told me that her students brag about “leaving class without leaving your desk”.

Since there is no strong smell, kids are using vape pens to conceal their marijuana use from parents, school personnel and law enforcement.

QUIT SMOKING

START VAPING

DISCOVER THE 100% SMOKE FREE
ALTERNATIVE TO TOBACCO TODAY

BENEFITS OF VAPING:

NO CARCINOGENS

NO TAR NO TOXINS

NO ASH TRAY SMELL

TURN IN YOUR PACK OF CIGARETTES INSIDE
AND RECIEVE A FREE BOTTLE OF E-JUICE WITH
YOUR FIRST PURCHASE OF A STARTER KIT

How do smoking and vaping costs compare?

According to an online shop called *Flavr Vapor Lounge*:

“After purchasing your equipment, (approximately \$40.00) you’ll want to buy a few bottles of e-liquid (or juice, as we call it). A 15mL bottle of juice, the equivalent of a carton of cigarettes, costs \$10 – \$15. Compare this to spending \$70 to \$125 on a carton of cigarettes and you’ll see how you can save a lot of money by vaping instead of smoking cigarettes.

The ongoing cost of vaping is very low compared to smoking, too. A pack-a-day smoker spends about \$185 each month on cigarettes. A former pack-a-day smoker will use about 35mL to 45mL of juice in a month’s time, costing significantly less at only \$30-\$45 a month.

<http://www.flavrvapor.com/portfolio/how-much-does-it-cost-to-vape/>

Risks to youth:

- CDC reported high school usage rates rose from 4.7% in 2011 to 10% in 2012.
- Nicotine delivery devices are very addictive
- Calls to poison center involving e-cig liquids rose from 1 a month in September of 2010 to 215 per month in February of 2014. More than half of these were children under 5.
- The second hand aerosol contains metals, toxins and ultrafine particles in addition to nicotine.

Resource: E-Cig Fact Sheet

<https://www.actmissouri.org/product-category/fact-sheets/page/3/>

Marijuana: Shattering the Myths



Photo from the Huffington Post

As more states legalize marijuana for medical and recreational use, one constant remains a fact: when access increases, so do usage rates.

Like tobacco and alcohol, taxes raised from sales will only cover about 10% of societal costs.

One in six teens that use marijuana will become addicted to it.

Marijuana use for those under 25 damages brain development.

Teens are getting so many mixed signals about marijuana.

Common myths perceived by youth:

- It's natural, so it isn't harmful
- It's safer than alcohol
- Marijuana doesn't impair driving
- It isn't addictive
- It's legal in some states so it can't be that bad
- It's medicine

Natural?

Alcohol, tobacco, cocaine, and heroin are also “natural”, but no one touts them as “safe”

Smoking anything is unhealthy

Commercial pot growers use toxic pesticides and other chemicals to increase yields

Many plants are poisonous

Safer?

No intoxicating substance is safe, and marijuana's effects are usually felt immediately after smoking it.

Marijuana can damage brain development.

Less safe than alcohol and tobacco does not equal safe.

THC levels in today's marijuana are up to 30%; higher than the 3-5% found in marijuana from the 70s and 80s.

Edibles have varying doses of concentrated THC making them easy to overdose on.

Not addictive?

Repeated marijuana use can lead to addiction.

1 in 11 users will become addicted

1 in 6 teens that use marijuana become addicted

Withdrawal symptoms include insomnia, irritability and anger, depression, sweats and headaches.

Marijuana Facts for Teens, NIDA

Impaired driving?

Marijuana is the most common illegal drug involved in auto fatalities.

14% of drivers that die in accidents have marijuana in their blood, sometimes in combination with alcohol.

It effects alertness, reaction time, concentration, the ability to judge distance, and coordination.

Marijuana Facts For Teens, NIDA

It's legal in some states.

Marijuana usage rates have risen as a result of legalization, duh!!

8.4% of Americans over the age of 12 are current users, up from 7.5% in 2013.

In adults age 26 and over, usage rates increased from 5.6% in 2013 to 6.6% in 2014.

National Survey on Drug Use and Health, 2014

Medicine?

What other medicine is approved through legislation?

What other medicine is smoked?

Less than 3% of medical marijuana card holders in CA have chronic illnesses. The majority of card holders are males, age 26-32, claiming “chronic pain” as the ailment.

Pro-marijuana legalizers use “medical” as a gateway to legalization.

Prescription and Over the Counter (OTC) Drug Abuse

Physiological Effects:

- Increased blood pressure or heart rate
- Damage to brain and other organs
- Accidental overdose/poisoning
- Physical dependence/addiction
- Disruption in breathing (respiratory depression)
- Seizures
- Death-stop breathing
- Risks associated with mixing multiple drugs or combining with alcohol (Pharm Parties)

Why are teens abusing RX drugs?

Easy to get (medicine cabinets are not monitored)

Thrill seeking

Friends are doing it

Escape problems or self medicate

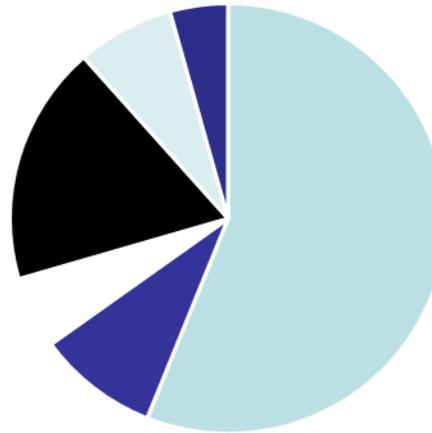
Lack of self esteem

Perceived as safe because prescribed by doctor and they are legal

Less stigma

Parents less likely to disapprove

Where do teens get these drugs?



- Obtained free from a friend or relative
- Bought from friend or relative
- Took from a friend or relative without asking
- From one doctor
- Other, including bought on internet
- Bought from drug dealer

Missouri specific statistics:

7.5% of MO teens have used RX drugs non-medically in the past year, 3.7% in the past month. This is down 1% from 2012!

3% of teens have used OTC medicine non-medically in the past year, and less than 2% in the past 30 days.

28.6% of MO teens think that RX drugs are “very” or “sort of” easy to obtain. 52.5% think that OTC drugs are very or sort of easy to obtain.

Missouri has the 7th highest overdose mortality rate in the nation.

Most abused OTC products are:

DXM (Dextromethorphan) found in cough syrup and other decongestants and cold remedies.

Energy or downer drinks

Inhalants

Most abuse RX drugs:

Opioids for pain relief (Oxycontin, Vicodin)

Stimulants to treat ADHD (Adderall, Concerta, Ritalin)

Central Nervous System drugs for relieving anxiety (Valium and Xanax)

Prescription Opioid Abuse: A First Step to Heroin Use?

Prescription opioid pain medications such as Oxycontin and Vicodin can have effects similar to heroin when taken in doses or in ways other than prescribed, and research now suggests that abuse of these drugs may actually open the door to heroin abuse.

Nearly half of young people who inject heroin surveyed in three recent studies reported abusing prescription opioids before starting to use heroin. Some individuals reported taking up heroin because it is cheaper and easier to obtain than prescription opioids.

Many of these young people also report that crushing prescription opioid pills to snort or inject the powder provided their initiation into these methods of drug administration.

<http://www.drugabuse.gov/publications/drugfacts/prescription-over-counter-medications>

Synthetics: What a gamble!

K2, Spice, Synthetic Marijuana

Synthetic cannabinoids are chemically related to THC, the active ingredient in marijuana, and are sometimes called “synthetic marijuana” or “legal marijuana,” but actually the effects can be considerably more powerful and more dangerous than marijuana. Users can experience anxiety and agitation, nausea and vomiting, high blood pressure, shaking and seizures, hallucinations and paranoia, and they may act violently.

<http://www.drugabuse.gov/drugs-abuse/emerging-trends>

Although the Missouri Legislature banned Spice and K2 in 2011, they are still obtainable at some “head shops” because of their extremely high profitability.



Often times synthetic cannabinoids are marketed as “potpourri” or incense and state on their labels “not for human consumption”.



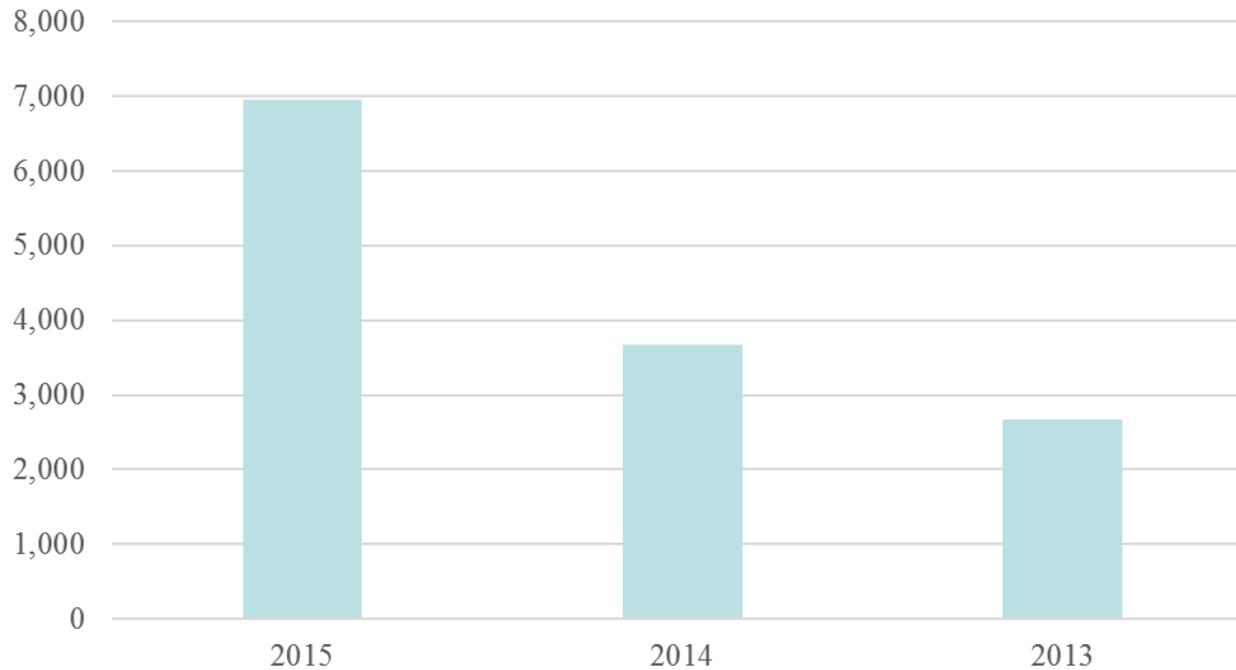
Synthetics are dangerous because each batch can be different. Many hospitalizations and emergency room visits are the result of Spice like products.

<https://www.youtube.com/watch?v=1T7Ms77vf1U>

Number of calls about K2 and synthetic cannabinoids:

Year	Month	Exposure	Information
2010		98	18
2011		286	46
2012		149	24
2013		86	6
2014		85	8
2015	January	2	0
	February	3	2
	March	2	1
	April	13	0

American Association of Poison Control Centers reports the following exposures to synthetic cannabinoids:



Bath Salts-The New “Take me Away!” (Synthetic cathinones)



MDPV (methylenedioxypropylone) is the active ingredient in Bath Salts and Plant Food. They are powerful mood altering stimulants and the effects are similar to cocaine and methamphetamine.

Usually snorted or smoked

Makes user feel more social and interactive

Highly addictive

https://www.youtube.com/watch?v=IF1Kb87P7_A

<https://www.youtube.com/watch?v=bKbTbRqXVFg>

As you can see, bath salts are a more brazen stimulant – can lead to muscle spasm or user may engage in meaningless repetitive motions or behaviors, similar to tweaking. High dose users have experienced hallucinations and profound paranoia.

ER reports from people high on bath salts:

I spoke to SSM in Jefferson City, when I asked her which drug they are seeing the most of, she said Bath Salts, Heroin, and then Meth. Friends bring someone in that is non-compliant, incoherent or experiencing respiratory failure. Most of the people they see do not foresee the repercussions of using Bath Salts. They have experienced major increases into ICU admissions for detoxing.

Heroin is Harrowing!

Heroin is a highly addictive opioid drug that is synthesized from morphine, a naturally occurring substance extracted from the seed pod of the opium plant.

It can be a white or brown powder, or sticky black like tar. Most heroin comes from Afghanistan, but recently, more heroin has been smuggled into the US from Mexico.

It can be snorted, smoked or injected. Many addicts start with snorting and divert to injecting to get a faster and more potent high. Sold in buttons for as little as \$10.00.

Often times the user will nod off after taking heroin, so the MHP refers to them as the “nod squad”.

Many heroin users report being addicted to opioid medications and switched to heroin because it is easier to obtain and cheaper than buying pills through the black market.

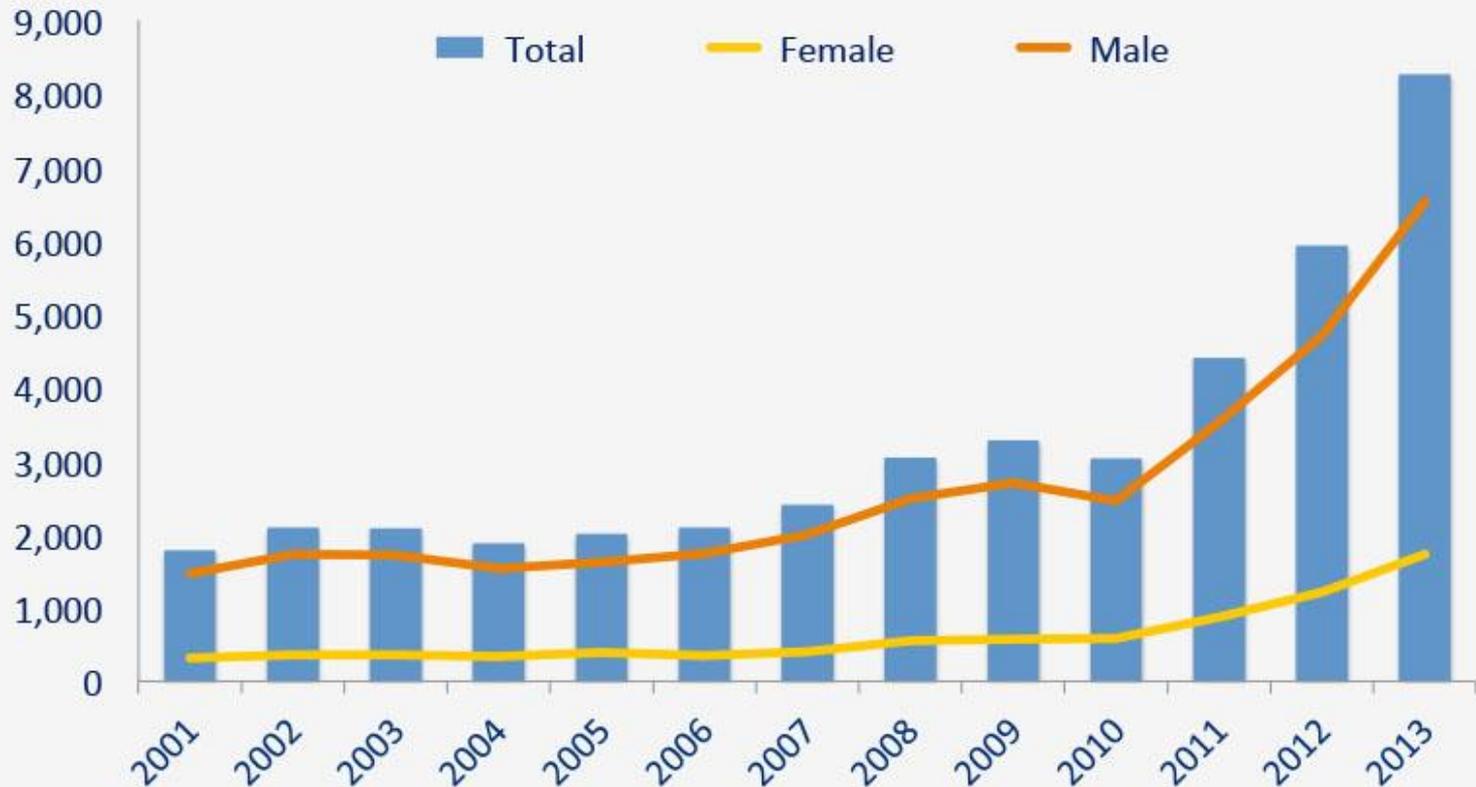
Overdoses are prevalent because of the varying purity levels. Many times, users that have had sustained periods of abstinence overdose because when they relapse, their tolerance is lower, but they used the same amount as when their tolerance was higher.

Because the drug is so potent, overdoses occur because the user simply stops breathing.



National Overdose Deaths

Number of Deaths from Heroin



Source: National Center for Health Statistics, CDC Wonder

Heroin addiction is very hard to overcome because of the harsh withdrawal symptoms. Many addicts use to prevent feeling “dope sick”.

Withdrawal symptoms can start to occur within a few hours after last dose:

Intense craving

Extreme sweating or cold sweats

Nausea, vomiting, diarrhea

Cramping in limbs

Extreme pain in muscles and bones

Insomnia

Methamphetamine: Missouri's Misery

For the first time in 10 years, MO does NOT lead the nation in meth lab seizures! It is in third behind IN and TN.

The main reason is that more meth is being produced in Mexico in super labs and smuggled into the states. Sometimes referred to as "Ice" Mexican meth is extremely pure.



Meth releases a surge of dopamine causing intense feelings of pleasure, energy, and euphoria. Over time, meth destroys dopamine receptors making it impossible to feel pleasure.

Chronic use causes psychotic behaviors, paranoia, insomnia, anxiety, extreme aggression, hallucinations, delusions and death. It causes extreme tooth decay, and some users pick at their skin causing open sores.

Sex causes dopamine levels to go from 100 to 200 units. Meth causes dopamine levels to reach 1250 units, 12 times more than food or sex.

<http://www.pbs.org/wgbh/pages/frontline/meth/body/#2>

Club Drugs: Ecstasy and Molly

Slang for “Molecular” from the drug MDMA

Ecstasy is the pill form

Produces energy and euphoria with users “the love drug”

Dangerous to teens because of dehydration and raised body temperature. It is often mixed with alcohol and other drugs.

Miley Cyrus “We Can’t Stop”

<https://www.youtube.com/watch?v=LrUvu1mlWco>

Prevention Works!!

MOST Missouri students do NOT drink or use drugs!!

What can educators/adults do to prevent substance abuse?

Be observant! Look for the signs:

- Hanging out with a different group of friends
- Isolated or hanging out with no one
- Victims of bullying are at higher risk
- LGBTQ community is at higher risk
- Once very involved with extra-curricular activities and now is not
- Grades slipping, assignments missing
- Sleeping in class
- Little regard for personal appearance or hygiene.

Educate yourself, School Board and Administrative team on the topic.

Include year-round prevention curriculum, starting in elementary school.

Be “the caring adult” in a kid’s life

Communicate with parents your concerns and observations

Check out the ACT Missouri website for resources and trainings

Be willing to share your story about addiction’s impact on your family to reduce stigma

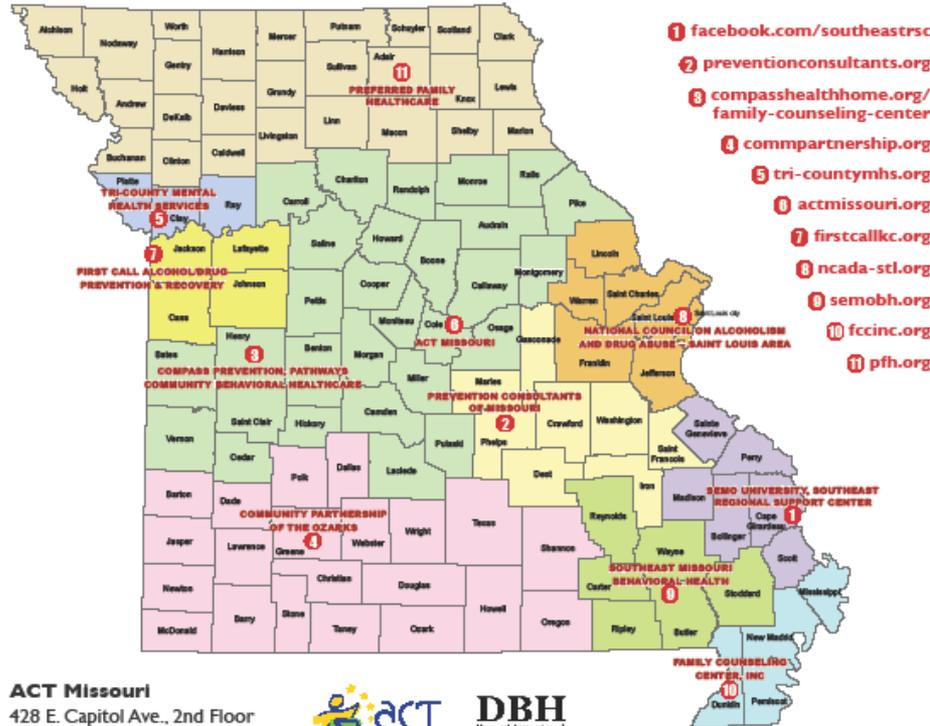
Decrease risk factors in your school and community!

- Are alcohol and drugs readily available? How many alcohol outlets are in your community?
- Give teens consistent messages about ATOD use
- Encourage parental involvement
- Intervene early with poor academic performance and try to get to root of failure
- Develop a great sense of community and belonging at your school
- Deter and try to get to the bottom of anti-social behavior
- Organize a social norm campaign that exclaims that most of your students are substance free!

PREVENTION RESOURCE NETWORK

- ★ **Did you know that Missouri has over 150 substance abuse prevention community coalitions?**
- ★ **Are you interested in joining or forming a coalition?**
- ★ **Do you need free resources, training, or prevention services at your school, church, or youth organization?**

CONTACT YOUR REGIONAL SUPPORT CENTER!



- 1** [facebook.com/southeastrsc](https://www.facebook.com/southeastrsc)
- 2** preventionconsultants.org
- 3** compasshealthhome.org/family-counseling-center
- 4** commpartnership.org
- 5** tri-countymhs.org
- 6** actmissouri.org
- 7** firstcallkc.org
- 8** ncada-stl.org
- 9** semobh.org
- 10** fccinc.org
- 11** pfh.org

ACT Missouri
 428 E. Capitol Ave., 2nd Floor
 Jefferson City, Missouri 65101
 877-669-2280 • actmissouri.org



Additional Resources:

ACT Missouri: www.actmissouri.org

Partnership for Drug Free Kids: www.drugfree.org

National Institute on Drug Abuse (NIDA) www.drugabuse.gov

Substance Abuse Mental Health Services Administration
(SAMHSA) www.samhsa.gov

Students Against Destructive Decisions www.sadd.org

Department of Mental Health www.dmh.mo.gov

Questions?

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