

Substance Use Prevention Truth About Drugs

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Disclosures

No financial relationships to disclose

I have no commercial, financial, research ties to any companies that manufacture medications mentioned in this presentation

I may use brand names of medications in this presentation

Objectives

- Know trends for recreational drug and substance use in the US
- Diagnosis and screening for recreational drug and substance use
- Understand the role of parent and providers in prevention, diagnosis, and treatment of recreational drug use

Overview

- The teen brain
- What is normal identity formation?
- Marijuana
- Alcohol
- Other drugs

The teen brain

- Fully developed skills
 - Intelligence
 - Ability to learn
 - Memory
 - Complex emotions
- Still developing skills
 - Judgment, planning
 - Regulation of emotions
 - Inhibiting impulses
 - Regulation of stress
 - Sleep consistency



Early and Late Adolescence Development

Early & Middle (ages 11-15)

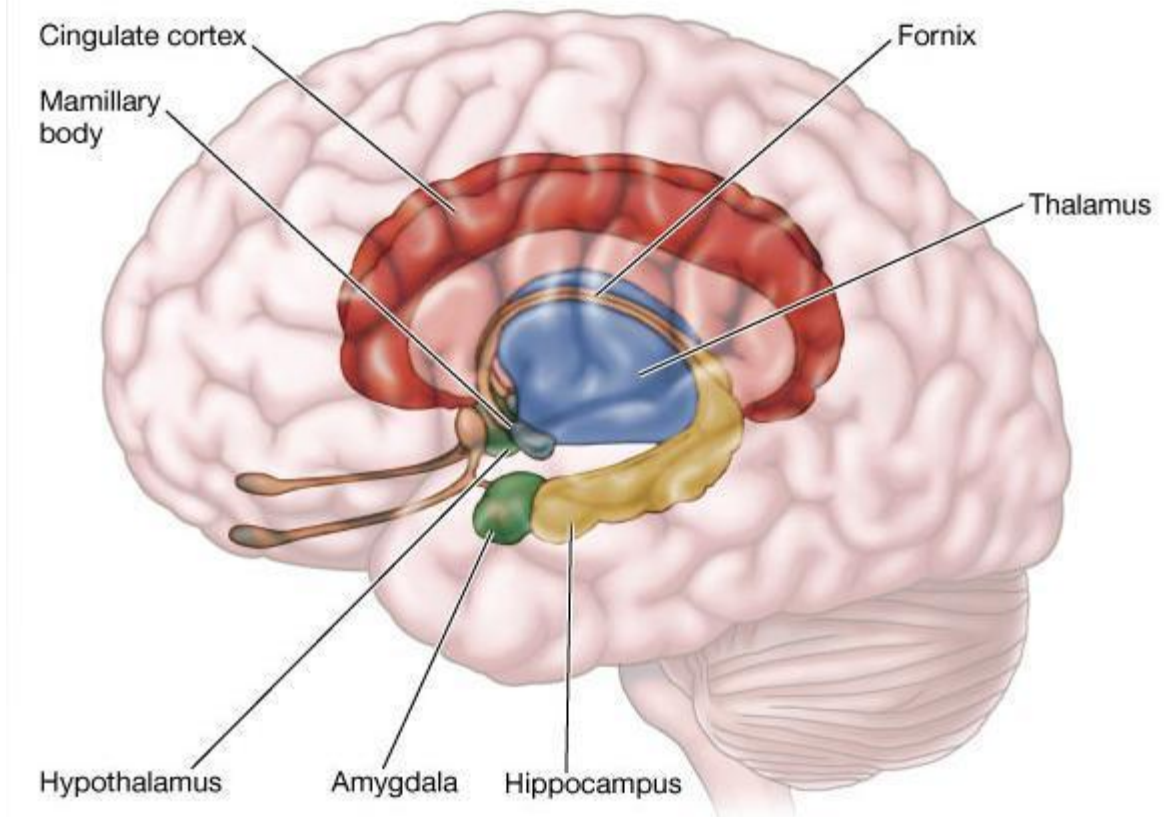
- Concrete thinking
- May not be aware of consequences
- Like structure school
- Am I normal?
- It can't happen to me!

Late (ages 16-21)

- More abstract in thinking
- Reasoning skills
- More introspective
- Insist on independence
- Test limits – risk taking
- Need to please peers
- Conform to peer group

The Limbic System

- Responsible for emotions
- Matures sooner than the prefrontal cortex
- In adolescence, neurons are being pruned
- These changes in grey matter may not be completed until the mid 20's



Brain Images

15 yr. old non-drinker vs. 15 yr. old heavy drinker

The brain images below show how alcohol may harm teen mental function. Compared with a young non-drinker, a 15-year-old with an alcohol problem showed poor brain activity during a memory task. This finding is noted by the lack of pink and red coloring.

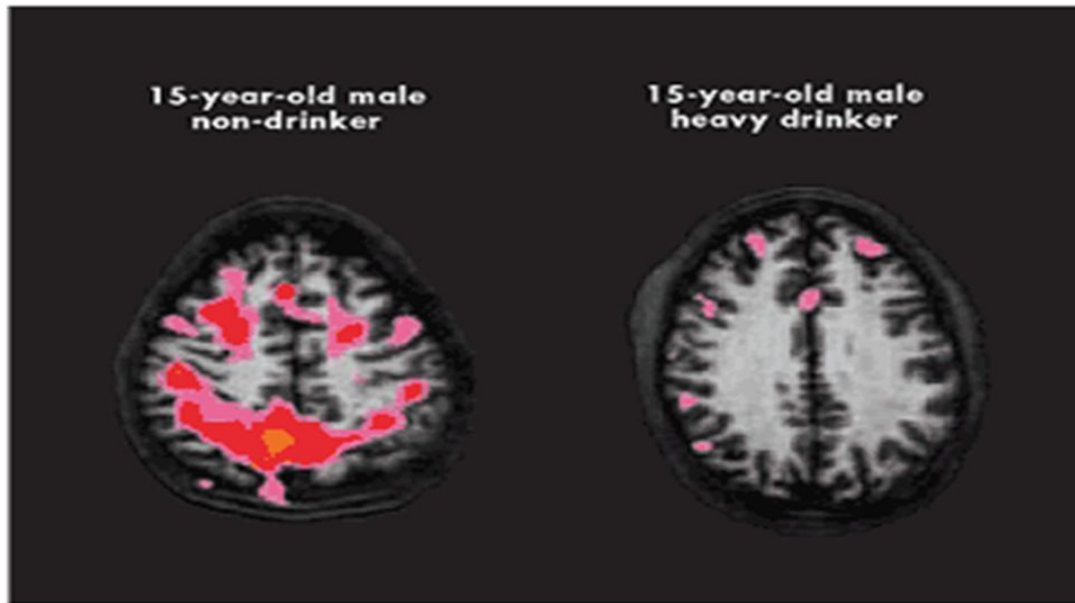


Image from Susan Tapert, PhD, University of California, San Diego.

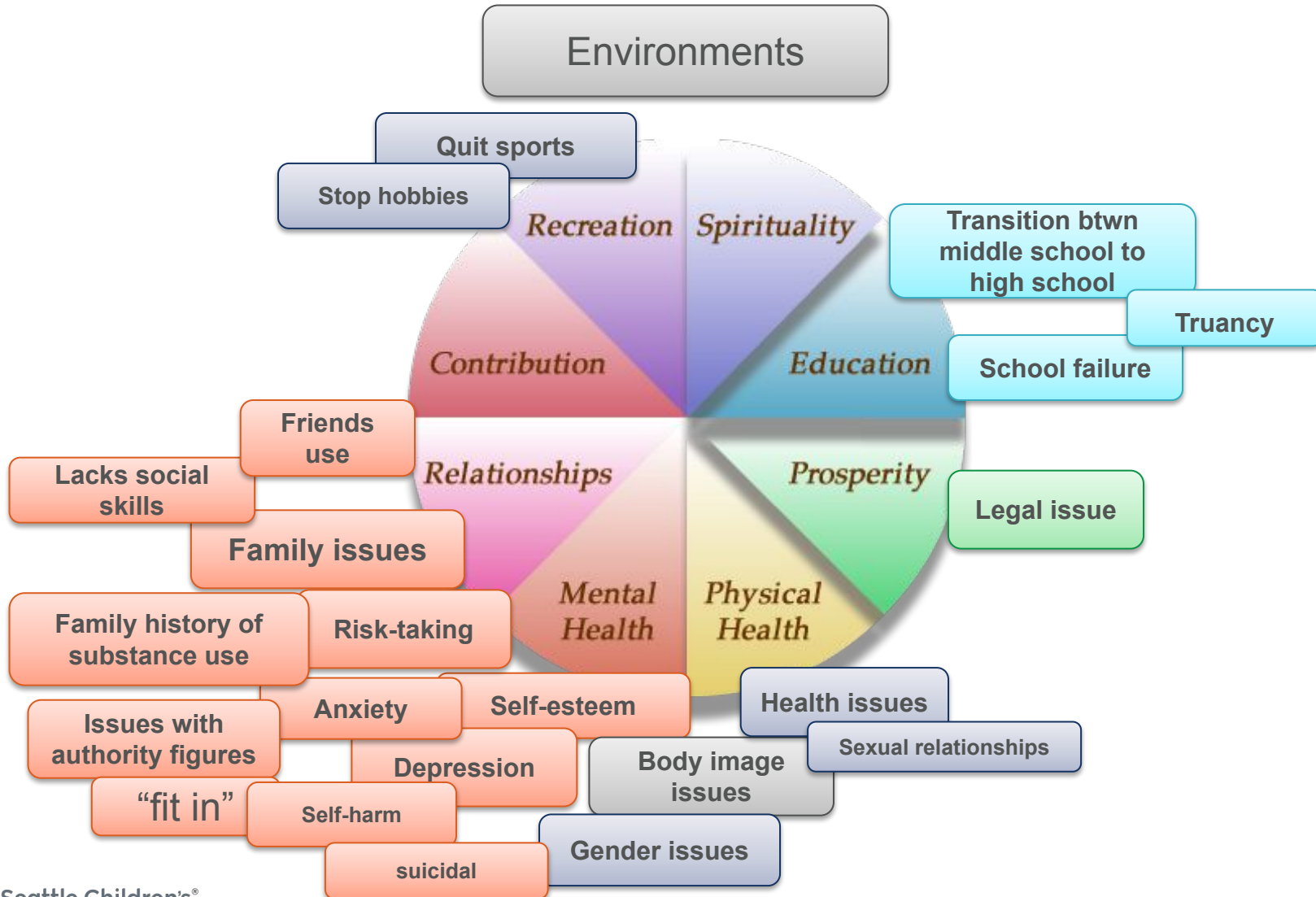
What is normal identity formation?



Areas of the Person's Life



Vulnerability Factors





Substance Abuse



- Posting a profile picture or cover photo showing a reference to alcohol has been associated with problematic drinking (1+ binge or use within past month)
- In a sample of tweets, most that were alcohol related expressed positive feelings towards drinking
 - Does this normalize drinking for teens who view tweets by peers?

Moreno MA, Cox ED, Young HN, Haaland W. Underage college students' alcohol displays on Facebook and real-time alcohol behaviors. *J Adolesc Health* 2015 June;56(6): 646-51

Cavazos-Rehg PA, Krauss MJ, Sowles SJ, Bierut LJ. "Hey everyone, I'm drunk." An evaluation of drinking-related Twitter chatter. *J Stud Alcohol Drugs*. 2015 Jul;76(4):635-43

Risk Factors

- Conflict at home
- Family history
- School problems
- Low-self esteem
- Body image issues
- Impaired social-skills, poor relationships
- Depression, suicidality, anxiety
- Friends/peer groups use
- Transitions between schools or grade levels
- Risk-taking, lack of fear
- Sexual orientation
- Has been involved in juvenile justice

Warning signs of drug use

- Breaking curfew
- Mood swings
- Sudden decline in health or school performance
- Low self-esteem
- Lying, secretive
- Stress or trauma (physical, sexual)
- Mental health issues
- Family factors
- Making excuses
- Staying in their room/social isolation from family
- Verbally and/or physically abusive
- Constantly requesting money
- Stealing ('losing' expensive items)
- Changes in friends
- Drug paraphernalia
- Unusual smells, heavy perfumes
- Juvenile justice system involvement

Specific Substances



Do any of these teens sound familiar?

Sage: 15 yo using marijuana nightly to help her sleep. She is coming to be seen due to missing too many days of school

Samantha: 14 yo using MJ with her family's permission but they are now concerned about tobacco use

Jake: 14 yo brought in after parents find paraphernalia in his room. He thinks there is no problem with using a natural herb, he still has a high B average, parents are not sure if it's a problem



Myth or Truth?

- 88% of adolescents who used marijuana obtained it from a friend or relative

Truth

- 59% of adolescents who used marijuana obtained it for free

Truth

- Marijuana isn't addictive. There aren't any side effects other than increased appetite.

Myth

- Teens who use marijuana are more likely to use other illicit drugs than kids who do not use marijuana

Truth

- 86% of teens who report using marijuana also report using alcohol

Truth

Drugs Impact Neurotransmitters

- Drugs work on the brain by mimicking neurotransmitters
- The reactions that occur by these false chemicals give a 'high' but they are not natural

Neurotransmitter	Action in the body	Drug (mimic)	Drug form(s)
GABA (gamma-aminobutyric acid)	Regulates communication btwn cells; Involved in mood, sleep, focus & growth hormone release	Alcohol: Indirect GABA agonist	beer, wine, hard alcohol, malt liquor
		Benzodiazepine	Examples: Xanax, Valium, Clonazepam,
Meta-enkephalin	regulation of pain, mitigation of stress (emotional & physical), the immune response, stomach functions, other physiological functions	Alcohol	
Serotonin	feelings of well-being and happiness	Alcohol	
		Cocaine	Crack/cocaine
		Amphetamine	Molly Ecstasy
Glycine	primarily found spinal cord & brain stem, prominent in protein synthesis	Benzodiazepine	
Endorphins/ Enkephalins	regulation of pain; mitigation of stress (emotional and physical), the immune response, stomach functions, and other physiologic functions	Opiates/Opioids	Heroin, prescription pain medications (OxyContin)
		Nicotine (endorphin)	Tobacco, e-cig
Dopamine	Regulate fine motor activity, emotional stability, satiation, and is a crucial in both substance and process of addiction.	Opiates/Opioids	
Norepinephrine	fight-or-flight response, provides energy. Confidence, feeling of well-being	Cocaine Amphetamine	
Epinephrine	fight-or-flight response, provides energy. Both norepinephrine and epinephrine affect motivation, hunger, attention span, confidence and alertness	Cocaine Amphetamine Nicotine	
Acetylcholine	arousal, attention, memory and motivation.	Cocaine Amphetamine Nicotine	

HEALTHY YOUTH SURVEY – reported percentage of all surveyed youth

8 th Grade WA State	2008	2010	2012	2014
Low Grades	26	26	23	20
Binge drinking	9	8	7	5
Depression	24	25	26	27
Marijuana Use	8	9	9	7
Attempted Suicide	8	7	8	9
Pain Killer to get high	4	4	3	2

10 th Grade WA State	2008	2010	2012	2014
Low Grades	32	29	26	26
Binge drinking	18	16	14	11
Depression	30	30	31	35
Marijuana use	19	20	19	18
Attempted Suicide	9	7	8	10
Pain killer to get high	9	8	6	5

Neurotransmitters & Marijuana

Neurotransmitter

- **Anandamide** – integration of sensory experiences with emotions, as well as those controlling learning, motor coordination, and memory.
- **Acetylcholine** - arousal, attention, memory and motivation, induce REM sleep and modulate mental acuity, memory and learning.
- **Dynorphin** - regulation of pain, the mitigation of stress (emotional and physical), the immune response, stomach functions, and a number of other physiological functions.



Marijuana/Cannabis

Forms: Leaf/bud, edibles, oils (dabs)

Administration: inhalation, oral

Devices: joints, pipes, bongs, water bongs, vape/vaporizers, rigs, infused foods/drinks.

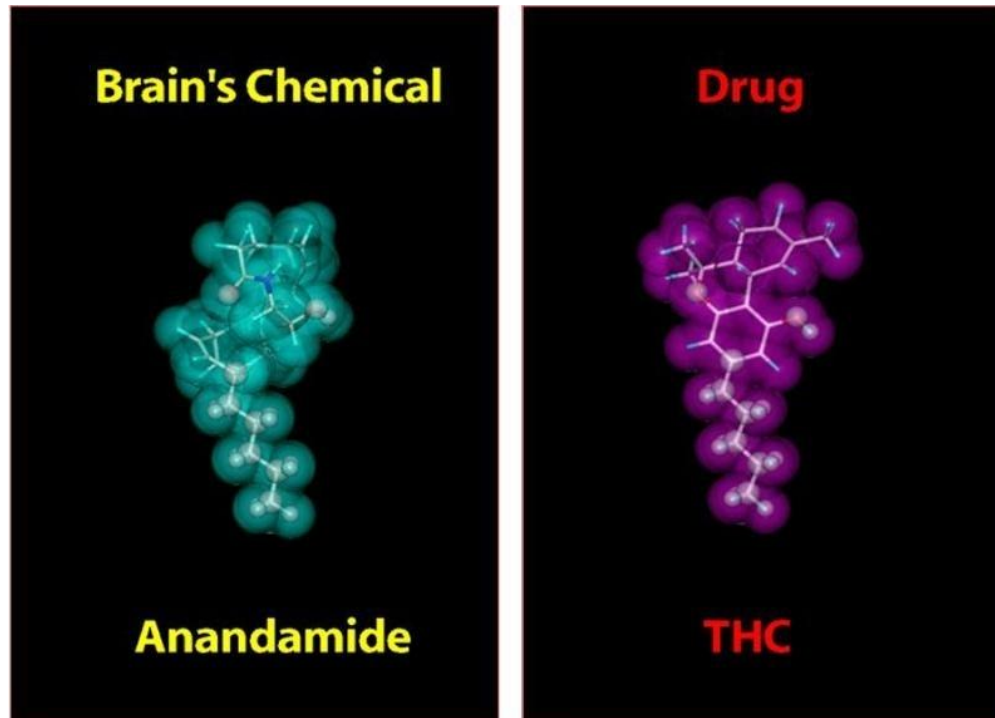
Percent of THC:

- **Leaf, bud, flower** – between 12%-25% depending on the strain.
- **Dabs/Dabbing** – THC believed to be 70-90%.



Anandamide vs. THC

- Anandamide – Sleep, Eating and Motivation
- THC – Delta 9-Tetrahydrocannabinoid



PET scans of the brain on marijuana



Brookhaven National Laboratory Center for Imaging and Neurosciences,
Behavioral, Pharmacology & Neuroimaging Lab, Upton, New York.
<http://www.bnl.gov/thanoslab>

Cannabis is addictive

Signs of withdrawal from cannabis

- Irritability, anger, aggression
- Nervousness/anxiety
- Sleep difficulties, e.g. insomnia or disturbing dreams
- Decreased appetite/weight loss
- Restlessness
- Depressed mood
- Significant discomfort from abdominal pain, shakiness/tremors, sweating, fever, chills, or headache

Symptoms are not otherwise explained by a medical condition or mental health issue

Marijuana Legalization—now what?

- Concerns for legalization:
 - It's legal for adults 21 and over, not for adolescents
 - Teens/parents may believe it is not harmful or addictive
 - some may believe it's a 'cure-all' for many ailments
 - Commercialization means that producers want to make products that are attractive and easy to use (i.e. edibles, vaporizers, hash oil) – be aware of industry targeting youth
 - Availability increasing



“Is there a difference?”

Medical vs. Recreational

- The only difference between “medical” marijuana and recreational is *taxation*
- A medical marijuana card is registered with the state registrar, so they are exempt from state taxes when purchasing
- Recreational stores who have been given the designation of being a “medical” marijuana dispensary must have a “medical marijuana consultant” to help dispense marijuana

Alcohol

How many “drinks” can this tumbler hold?

16 fl oz Tumbler

1.5 fl oz = 1 drink



- Did you know that a 16 oz. tumbler contains over 10 drinks if filled to the rim with hard alcohol?
- Most teens get their alcohol from their parents' liquor cabinet or from their friend's parents
- It takes about 15 – 20 minutes for alcohol to reach the brain and cause impairment.
 - 30 – 90 minutes after ingestion to reach maximum blood alcohol concentration
- About 1 oz. of pure alcohol is eliminated from the body every 3 hours

Signs of Alcohol Poisoning

What is the first signs of alcohol poisoning?

Nausea and vomiting are almost always the first alcohol poisoning symptoms. These symptoms of alcohol poisoning are messages from your body and from your brain that you consumed more alcohol than your body can metabolize.



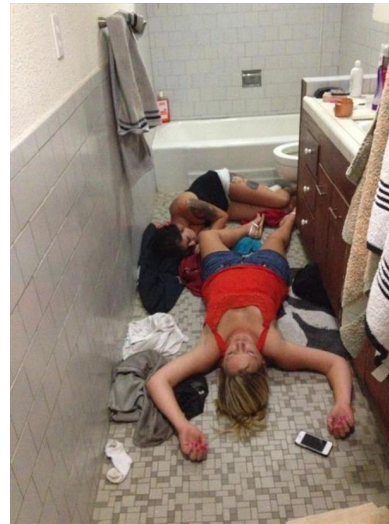
Alcohol Poisoning Dos and Don'ts

- **Don't:**

- Give them liquids or solid foods.
- Give them a shower (cold/hot).
- Put them in a corner or in a bed.
- Leave them alone.

- **Do:**

- Lay them on their side
- Stay with them
- Call 911!



Asking about alcohol

- What do you drink?
 - Hard alcohol vs. beer
- How do you drink it?
 - Cup, out of bottle, mixed drink
 - Helps quantify use
- How quickly do you drink it?
- Have you ever vomited, blacked out, or passed out from drinking?
 - Woken up in a place and didn't expect to be there
 - Woken up without knowing how you got there
- Ever been hurt or done something you regretted?
- Ever been in a car with someone who has been drinking, or driven after drinking yourself?

Downers



- **Alcohol**
- **Benzodiazepines:** Alprazolam (Xanax), Clonazepam (Klonopin)
- **Sedatives/Tranquilizers:** Zolpidem (Ambien)
- **Opiates:** Oxycodone (OxyContin), Hydrocodone (Vicodin), Codeine, Morphine, Methadone, Meperidine (Demerol), Heroin

Heroin

- Administration

- Snorted
- Smoked
- Injected

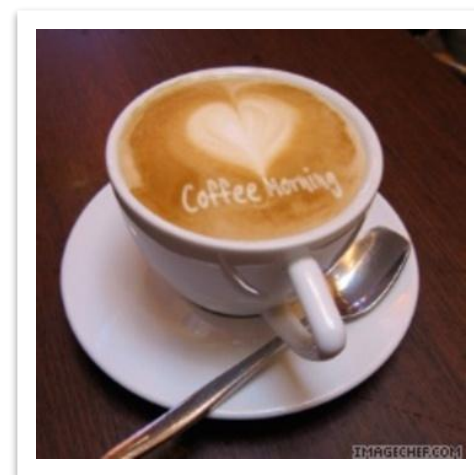


- Most adolescents will say they will NEVER use heroin.
- When they are told that heroin is the same as pain pills, it seems like an eye opener.
- Heroin is cheaper and more available than opiate pills



Uppers

- Cocaine
- Amphetamine - Methamphetamines
- Adderall, Ritalin
- Nicotine
- Energy drinks
- Caffeine

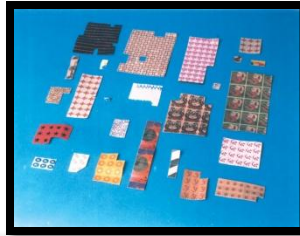


Prescription/OTC Drugs

- Adolescents will abuse prescription medications, regardless of whether or not they can get high on them
- Pain Pills – OxyContin, Oxycodone, Hydrocodone, Vicodin, Percocet, Morphine, Methadone, Demerol, Codeine, Percodan, Percocet, Dilaudid, Fentanyl
- Ketamine
- ADHD Medications – Adderall, Ritalin
- Sleeping Pills and Tranquilizers – Ambien, Trazodone
- Anti-Anxiety Medications – Xanax, Valium, Klonopin, Rohypnol, Diazepam, Librium
- OTCs: DXM, Sudafed, Coricidin, Benadryl
- Most adolescents obtain these pills through:
 - Personal prescriptions
 - Friends/family
 - Other people's homes
 - Dealers/On the street

All-Arounders

- Marijuana
- LSD/Acid
- MDMA (Molly), Ecstasy
- Ketamine
- PCP
- Peyote
- Psilocybin mushrooms
- DMT
- 2CI, 2CB, 25I
- Dextromethorphan (DXM)



Electronic cigarettes & Vape Pens

- Becoming more common amongst teens for both nicotine and cannabis oils.



E ELITE



Now that we know about the substances...

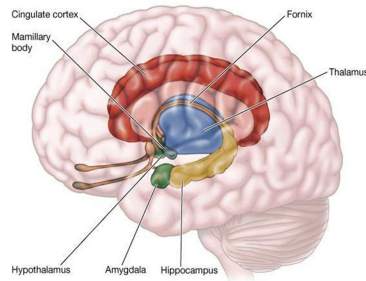


Addiction

- **Addiction is a brain disease**
 - Needs to be addressed as a medical issue
- **Addiction starts in adolescents**
 - Impacts brain development
- **Addiction is a progressive disease**
 - Drug use needs to be address in its early stages



Bio-Psycho-Social Influences



Massive pruning leads to vulnerability

-Peer influence



-Self-medicating
-trigger for mental illness

General Approaches for Providers

- Teens may be reluctant to talk
 - Due to concern that you will tell their family/friends or embarrassed
- We have to build rapport and trust
 - This takes **time** which is in short supply
- First step to trust is establishing that in this relationship you are **their** provider
 - Consider asking parent, siblings, whoever is in the room to step out

Normalize this by starting the encounter with an intro:

“When seeing a teen, I always ask the parents to step out for a moment. We’ll all come back together at the end”

Be Confident

- As providers we're often uncomfortable tackling adolescent risk topics *or* we may feel we don't have time or expertise
- Ask your questions **confidently**, without passing any judgment

Don't assume anything

Reassure the teen about confidentiality

Ask the same questions of everyone, regardless of gender, ethnicity, economic background, religion, etc

*Example: "Have you ever tried any drugs to relax?
What did you use? How often?"*

HEADSS



My 'cheat sheet' for the adolescent visit

- **H**ome
- **E**ducation
- **A**ctivities
(*Exercise/eating*)
- **D**rugs
- **S**ex
- **S**uicide (*Depression*)
 - *Spirituality*
- Asking the HEADSS questions can take as little as 2 minutes
- Start with 'getting to know you' questions
 - 'Who lives at home with you?'
 - 'What grade are in you at school?'
 - 'What do you like to do for fun?'

CRAFFT

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Screen all adolescents with this tool!

- Have you ever ridden in a **CAR** driven by someone (including yourself) who was “high” or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to **RELAX**, feel better about yourself, or fit in?
- Do you ever use alcohol or drugs while you are by yourself, or **ALONE**?
- Do you ever **FORGET** things you did while using alcohol or drugs?
- Do your **FAMILY** or **FRIENDS** ever tell you that you should cut down on your drinking or drug use?
- Have you ever gotten into **TROUBLE** while you were using alcohol or drugs?

Two or more **“YES”** answers on the CRAFFT suggest a serious problem and a need for further assessment.

Additional Screening tools

- From the National Institute on Drug Abuse
 - Screening to Brief Intervention (S2BI)
 - Brief Screener for Tobacco, Alcohol, and other Drugs (BSTAD)

<https://www.drugabuse.gov/adolescent-substance-use-screening-tools>

The Role of Adults

- Teens report that they use tobacco, alcohol, and other drugs most often are between the hours of 3:00 pm and 6:00pm
- Teens who are involved in organized sports, after school activities or youth groups are less likely to smoke or use drugs
- Teens who have a trusted adult who they respect will likely listen to them, even if they don't seem like it

Parental Guidance

- When talking with children and adolescents about drugs
 - Stay calm
 - Voice your concerns in a non-judgemental way
 - Ask questions in a non-judgemental way AND

Listen

Be HONEST

Talk with them at their age level

Share on a “need to know” basis that is age appropriate

Partner with parents and send the same message - there are too many mixed messages out there.

- “Trust but verify” – when teen is going out:
 - Where?
 - With who?
 - When will you be back?
 - What will you be doing?
 - I’ll check in with you via phone at least once (or you message me). If you don’t respond, you lose the privilege to hang out
 - Call/text friends’ parents to verify

Confidentiality

All adolescents should have time alone with their provider.

- In Washington:
 - No parental consent required for substance treatment at age 13 or older
 - This means asking about drugs is confidential (unless concerned about safety)

911 Good Samaritan Law

STOP OVERDOSE DEATHS!

Washington State's "911 Good Samaritan" Law Effective June 10, 2010

Drug overdoses kill more than two people per day in Washington State. More Washingtonians die every year from overdoses than from car crashes. Most drug overdoses involve a prescription medication used with other drugs or alcohol. Most of these deaths can be prevented with fast medical help.

If you think you're witnessing a drug overdose and seek medical help, **you will receive immunity from criminal charges of drug possession**. The overdose victim you're helping is protected, too. **Call 911.**

The law also expands access to Naloxone (Narcan), an opiate antagonist that reverses overdoses from opiates.

Under the Washington state 911 Good Samaritan Law, immunity *does not* extend to outstanding warrants, probation or parole violations, drug manufacture or delivery, controlled substances homicide, or crimes other than drug possession.

CALLING 911 CAN SAVE A LIFE!

<http://StopOverdose.org>



Lock up all medications

- Lock-up All Medications regardless of their abuse potential
- Be aware of interactions (Rx and substances)



Levels of Treatment

- **Intervention** - Level of experimentation
 - Alcohol and Drug Education Class/Alcohol and Drug Information School
- **Outpatient Level I** – no previous treatment, level of use doesn't indicate higher level of treatment
- **Intensive Outpatient Level II** – difficult to recommend
- **Inpatient Level III** – usually level of use is almost daily, disruptive/dangerous behaviors, suicidal, lacks motivation, not attending school, legal, family conflict

Useful Websites

- National Institute for Drug Abuse (NIDA)
<http://www.drugabuse.gov/>
- National Institute for Mental Health (NIMH)
<http://www.nimh.nih.gov/index.shtml>
- Substance Abuse Mental Health Service Administration (SAMHSA) <http://www.samhsa.gov/>
- Science and Management of Addiction (SAMA)
<http://samafoundation.org/>
- <https://www.k12.wa.us/student-success/health-safety/healthy-youth-survey>

Office of WA Superintendent – great resources on various substances

Questions

