Teen Substance Use; America's #1 Public Health Problem

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Disclosure

- Volunteer Member of Attorney Generals Task Force for Prescription Drug Abuse 2012-current
Welcome to being a parent of a teenager. Prepare for a large amount of eye rolling, emotional outbursts, and thoughts of running away. And that's just the parents.
Addiction in the US

- The US health care system contributed to the current opioid and heroin epidemic
- We absolutely need to increase access to treatment
- We need to improve how we treat pain
- We need to look for innovative solutions to prevent addictions
- Addiction in US $700B annually
- Addiction has adolescent origins

https://www.drugabuse.gov/related-topics/trends-statistics
**Risk of Addiction**

- **90%** adults with substance abuse (nicotine/ alcohol /drugs) began smoking, drinking or using drugs < 18yo

- If use of substance < 18yo
  - **25%** become addicted

- If use of substance > 21
  - **4%** become addicted

- Children < 15yo who use any addictive substance are 6.5X more likely to develop a substance use disorder as those who delay use until age 21 or older (**28.1 percent vs. 4.3 percent**).

Adolescent Brain

- Has traditionally been viewed with adult brain prism
- Societal norms based on incorrect assumption of brain development
- Die is not cast at puberty
- Immeasurable neuroplasticity; extraordinary ability to learn new things
- Life Experiences during adolescence often significant primer future
- Harness a skill or talent
Teen Brain (<24 yo)
Immature Frontal Lobe & Executive Function

Executive function includes impulse control, problem solving, and inhibition, working memory and recognition of long term consequences.
Teen Brain (<24 years old)

- Primed to take risks
- Seek experimentation
- Immature decision making, judgment, impulse control
- Emotion & memory are not yet fully developed in adolescence

- Addictive substance use physically alter brain structure and function faster and more intensely than in adults
  - Interfering with brain development
  - Further impairing judgment
  - Significantly increase the risk of addiction
Why do teens use drugs or alcohol?

If using/abusing...

- To fit in
- To escape or relax
- To feel grown up
- To relieve boredom
- **To feel good** /excitement
- To rebel
- To experiment (curiosity)
- Peer Pressure
- To stay awake

If dependent on them...

- Craving ... a strong need or urge ingest substance
- Loss of control ... not being able to stop or cut down
- Feeling bad physically and emotionally when not using
Brain Physiology 101

When your brain releases one of these chemicals, you feel good.

Dopamine  Serotonin  Oxytocin  Endorphin

MeetYourHappyChemicals.com

Loretta G. Breuning, PhD
Dopamine hardwires brain “Reward/Motivation” in Teen Brain

- Typically, dopamine (feel-good hormone) in the brain increases in response to natural rewards, such as food, sex and social interaction. When cocaine is taken, dopamine increases are exaggerated, and communication is altered.
Reward Pathway – Feel Good (Motivation) hormones
Spectrum of Substance Use

- Beneficial Use
- Casual Non-Problematic Use
- Problematic Use (all adolescent use of addictive substances)
- Chronic Dependence/Addiction
Consequences of Teen Substance Use

- Injuries
- Unintended pregnancies/STI’s/Sexual assault
- Asthma
- Depression, anxiety, psychosis
- Impaired brain function
- Reduced academic performance
- Reduced educational achievement
- Criminal involvement
- Death
DRUG ADDICTION

Addiction is a condition characterized by repeated, compulsive seeking and use of drugs, alcohol or similar substances despite adverse social, mental and physical consequences.
Treatment of Addiction

- Lifelong Recovery
- Cost prohibitive
- Difficult to access
- Relapse is the norm
- Life is never the same
Risk of Addiction Depends on . . . .

- Genetic inheritance (40-60%)
- Biological responses to the reward (Cannot control this)
- Past adverse experiences (neglect or abuse)
- Temperament
- Social influences
- Underlying mental health (including stress)
- Maturity of the brain
Monitoring the Future 2015

- 44,900 students (8th, 10th, 12th)
- Looks at trends, attitudes & beliefs about substance use
- Cigarettes / Alcohol are lowest in history of study
- Marijuana Perception of risk
  - 68% of 12th graders do not believe regular use of Marijuana is harmful
PRESCRIPTION/OVER-THE-COUNTER VS. ILLICIT DRUGS*

- Amphetamines: 7.7%
- Adderall: 7.5%
- Opioids other than Heroin: 5.4%
- Tranquilizers: 4.7%
- Cough Medicine: 4.6%
- Vicodin: 4.4%
- OxyContin: 3.7%
- Sedatives: 3.8%
- Ritalin: 2.0%
- Marijuana/Hashish: 34.9%
- Synthetic Marijuana: 5.2%
- Hallucinogens: 4.2%
- MDMA (Ecstasy): 3.6%
- Cocaine (any form): 2.5%
- Inhalants: 1.9%
- Salvia: 1.9%

*The percentage of 12th graders who have used these drugs in the past year.

Despite the ongoing opioid overdose epidemic, past-year use of opioids other than heroin has decreased significantly each year over the past 5 years among the nation's teens.

Heroin use has also decreased over the past 5 years and is at the lowest rate since the MTF survey began.

WWW.DRUGABUSE.GOV
TEENS ARE MORE LIKELY TO USE E-CIGARETTES THAN CIGARETTES

*Past-month use

- 8th grade: 3.6%
- 10th grade: 6.3%
- 12th grade: 16.2%

64.7% of 12th graders reported vaporizing “just flavoring” in their last e-cigarette; some didn’t know what they inhaled. E-cigs are unregulated so flavored liquid might actually contain nicotine.

CIGARETTES  E-CIGARETTES

64.7% 22.2% 6.1% 6.3%

FLAVORING NICOTINE MARIJUANA CRASH OIL DON'T KNOW

NIH National Institute on Drug Abuse

WWW.DRUGABUSE.GOV
E-Cigarettes & Vaping
Marijuana Use is Common

- Marijuana is the most commonly used illicit drug in the U.S.
- 7% of all >12yo use Marijuana
- 19% of all 18-25yo use Marijuana
- 48% of adults in the US report having used marijuana at some time in their life

SOURCES: SAMHSA 2012; Pew Charitable Trust, 2013
Why Do People Use Marijuana?
Among people who used marijuana in the past year:

- 47% For Fun
- 30% For Medical Reasons
- 23% For Fun and for Medical Reasons

SOURCE: Pew Charitable Trust, 2013
Marijuana growers have worked to make the drug as potent as possible. In 1960s-70s average THC concentrations were 1-2%. Today, they are as high as 20%.

“It’s not your dad’s ‘pot’ anymore”

SOURCES: Kleber, 2012; TRI, 2012
Marijuana Short Term Effects

Potential Upside

▪ Reduce anxiety
▪ Promote Euphoria
▪ Promote Relaxation

Potential Downside

▪ Impaired memory
▪ Impaired learning attention
▪ Impaired reaction time/coordination (drugged driving)
▪ Increase risk Paranoia/Psychosis
▪ Impair decision making
▪ Acute intoxication (rare)

Giedd J.N., 2004
Teen Marijuana Use & Long-Term Associations

- Teen Marijuana users 2X likely to drop out HS
- Weekly marijuana users 6X more likely drop out HS
- Persistent and heavy use among adolescents reduces IQ by 8 points
- Increased risk of mental illness (cause or effect)
  - Schizophrenia (6 fold)
  - Psychosis
  - Depression/Anxiety
  - Amotivational syndrome
1 in 6 teens become addicted

1 in 10 adults and 1 in 6 adolescents who try marijuana will become addicted to it.

- The adolescent brain is especially susceptible to marijuana use.
- When kids use, they have a greater chance of addiction since their brains are being primed.

Is Marijuana a gateway drug?

If started before full brain maturation – likely
If started in adulthood- unlikely
What is “Spice” “K2”? (Synthetic Marijuana)
What is Spice?

- Spice or K2 is a mixture of herbs or spices sprayed with synthetic chemicals similar to THC in marijuana but more powerful when smoked to get high.
- Spice is NOT Marijuana, it is a dangerous Hallucinogenic Drug!
- Intentionally Mislabeled as “herbal incense”, and “potpourri”.
- Marked “Not For Human Consumption”
During high school, Sam was an honors class student who twice earned the Outstanding Academic Achievement recognition from his school. He also was twice named a Metropolitan Interscholastic Conference Scholar Athlete. He loved being an athlete, especially playing basketball, and he was proud to call himself a Trojan. Sam loved listening to music as well as playing his tenor sax at Center Grove, where he was first chair for several years. He was an outdoor enthusiast, enjoying hiking, fishing, hunting and going to the beach. Sam prized his laptop and was an avid gamer.
Spice (synthetic marijuana)
Effects on Mind & Body

- Agitation
- Anxiety including extreme panic attacks
- Depression
- Paranoia
- Psychosis
- Hallucinations
  - Visual
  - Auditory
- Increased blood pressure
- Increased heart rate
- Cardiac arrest
- Blood shot eyes
- Insomnia
- Tingling, numbness
- Vomiting
- Seizures
- Tremors
- Suicidal Thoughts?
Synthetic Marijuana (Spice/K2) Dangers

- Unregulated, Untested, No Medicinal Use
- No long-term studies, the true effects are not yet known
- Never Tested on Humans
- Spice/K2 is **physically addicting**
- Dangerous! One-time use has resulted in death!
- Flavors - Cotton Candy, Bubble Gum, Juicy Fruit, Strawberry, Fruit Punch
17-year-old Tara Fitzgerald decides to experiment with drugs
Prescription Drug Misuse

- USA <5% of world population
- consumes 99% global hydrocodone
- consumes >80% global opioid

Source: NSDUH 2009
Commonly Abused Prescription Drugs
Every 19 minutes an American Dies of a Prescription Drug Overdose
## Drug Overdoses Kill More Than Cars, Guns, and Falling.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falling</td>
<td>26,852</td>
</tr>
<tr>
<td>Guns</td>
<td>31,672</td>
</tr>
<tr>
<td>Traffic accidents</td>
<td>33,687</td>
</tr>
<tr>
<td>Drug overdoses</td>
<td>38,329*</td>
</tr>
</tbody>
</table>

*30,006 of which were unintentional.

US Death Rate
Car Accident vs Overdose

Deaths per 100,000 population

Motor Vehicle Traffic  Poisoning  Drug Poisoning (Overdose)

Year

Motor Vehicle Traffic

Poisoning

Drug Poisoning (Overdose)
Overdose death rates by drugs
Rates of Opioid Overdose Deaths, Sales, and Treatment Admissions, United States, 1999–2010

[Graph showing trends in opioid sales, deaths, and treatment admissions]

CDC. MMWR 2011. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm60e1101a1.htm?s_cid=mm60e1101a1_w. Updated with 2009 mortality and 2010 treatment admission data.
2011 INDIANA ALCOHOL AND OTHER DRUG USE FACTS about HIGH SCHOOL STUDENTS

21% have ever taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription.
2015 Nonmedical Use of Vicodin and OxyContin during past year

Vicodin
▪ .9% of 8th graders
▪ 2.5% of 10th graders
▪ 4.4% of 12th graders

OxyContin
▪ .8% of 8th graders
▪ 2.6% of 10th graders
▪ 3.7% of 12th graders

Source: Monitoring the Future (University of Michigan Web Site).
Source of Pills

Method of Obtaining Prescription Pain Relievers
Reported by Past Month Nonmedical Users Ages 12 or Older
(2009 & 2010 Combined Annual Averages)

- From Friend or Relative: 60.1%
- From One Doctor: 27.1%
- Bought from Friend or Relative: 26.8%
- Bought from Drug Dealer or Other Stranger: 11.5%
- Took from Friend or Relative without Asking: 11.2%
- Some Other Way: 6.5%
- From More Than One Doctor: 4.9%
- Bought on the Internet: 1.0%

National Survey on Drug Use and Health 2010.
ABUSE OF PRESCRIPTION PAIN MEDICATIONS
RISKS HEROIN USE

In 2010 almost 1 in 20 adolescents and adults – 12 million people – used prescription pain medication when it was not prescribed for them or only for the feeling it caused. While many believe these drugs are not dangerous because they can be prescribed by a doctor, abuse often leads to dependence. And eventually, for some, pain medication abuse leads to heroin.

1 IN 15

PEOPLE WHO TAKE NON MEDICAL PRESCRIPTION PAIN RELIEVERS WILL TRY HEROIN WITHIN 10 YEARS

Number of People Who Abused or were Dependent on Pain Medications and Percentage of Them that Use Heroin

- 2004: 1.4 million, 9%
- 2010: 1.9 million, 14%

Heroin users are 3X as likely to be dependent.
- 14% of non medical prescription pain reliever users are dependent.
- 54% of heroin users are dependent.

Heroin Emergency Room Admissions Are Increasing

- 2005: 200K
- 2008: 260K
- 2011: 230K
National Overdose Deaths

Number of Deaths from Heroin

- Total
- Female
- Male

Source: National Center for Health Statistics, CDC Wonder
A Heroin High

What does Heroin feel like?

▪ “falling into the softest bed of silk in the world”
▪ “floating on a cloud into the sky with complete control over the world”
▪ “warm feeling after a good rush, feel like I’m on top of the world”
▪ “warm golden sunshine flowing through your veins. It makes everything ok”
▪ “dreamlike detachment from any pain or discomfort. Only pleasure exists”
▪ “your life is perfect”

What does Heroin look like?
Addiction

Intoxicating euphoria

Use to get High

Use to Feel Good

Context becomes etched in memory

Ordinary rewards lose power

Increased sensitivity to stress

Negative emotions
Who are these people?
Mia Culpa- We Send Mixed Message
Mixed Messages

- Marijuana is marketed as medicine
- Barack Obama thinks Marijuana is OK, he used it in childhood
- Entertainment industry largely portrays teen substance use as “cool” & “fun”
- Some parents believe that children OK to use substances under their guidance
- Parents consider substance use normal or “Rite of Passage”
12th Graders - How much do you think people risk harming themselves (physically or in other ways), if they....

- Use marijuana regularly - 31% great risk
- Try heroin once or twice - 64% great risk
- Use heroin regularly – 84% great risk
- Try Narcotic Pill once or twice – 44% great risk
- Try Adderall occasionally – 41% great risk
- Use electronic cigarettes regularly - 16% great risk

Perception of Harm Matters

12th-grade Students

Past Year Use

Perceived Risk

Source: University of Michigan, 2010 Monitoring the Future Study
<table>
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<tr>
<th>Subject</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the last conversation they had with their parents regarding substance abuse, only 14 percent of teens indicated they had discussed the misuse or abuse of any type of prescription drug.</td>
<td>F-</td>
</tr>
<tr>
<td>In comparison, a majority of teens (81 percent) say they have discussed the risks of marijuana use with their parents.</td>
<td>B</td>
</tr>
<tr>
<td>80 percent have discussed alcohol.</td>
<td>B</td>
</tr>
<tr>
<td>Nearly one-third of teens have discussed crack/cocaine.</td>
<td>D-</td>
</tr>
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</table>

**Comments**

*Unsatisfactory: Stimulants contributing to R5 epidemic*

One in four teens believes that prescription drugs can be used as a study aid.

Nearly one-third of parents say they believe ADHD medication can improve a child’s academic or testing performance, even if the teen does not have ADHD.
Russian Roulette or Right of Passage?

If you could substantially improve the chances that children would avoid accidents, Injuries (including car accidents, rape and STI’s), a range of medical and mental health problems, unintended pregnancies, criminal involvement and even death, AND that they would do better academically and professionally, would you do it?
What Can We do?

DELAY ONSET OF SUBSTANCE USE

be it tobacco, alcohol, controlled prescription or other drugs--as long as possible
Russian Roulette

Even Once - Doing Meth, Bath Salts, Synthetic Marijuana, Prescription Narcotics, Heroin or Cocaine
Will harm a child & could kill a child
How can communities delay substance use?

- Make expectations consistent & very clear
- Model healthy behavior
- Model (real time) coping/problem solving skills
- Nurturing family environment – parental connection
- Discuss & Foster goals for the future
- Communicate openly & honestly about substance use
- Encourage involvement in Spiritual Practice/ Schools/Communities
- Foster SLEEP- Teens need 8.5-10h every night
- Eat family meals- provide NUTRITION
- Address stress, anxiety, depression or any mood issues
- **Restrict Access to all addictive substances (including prescription drugs)**
How to Talk to Adolescents: A New Approach

In the past, programs highlighting scare tactics against drugs have been heavily used. These programs have proven to be less helpful than one would hope. Other suggested methods of talking to adolescents:

- Beginning a conversation with the teen’s views
- Discuss results of drug use highlighting science rather than scare tactics
- Consider media messages and brainstorm together
- Discuss peer pressure before it becomes an issue
- Discuss own drug use if applicable
They're Going to Ask. Be Ready.

We can help you answer their tough questions.

LEARN HOW >

WHERE FAMILIES FIND ANSWERS

We provide support and guidance to families struggling with their son or daughter’s substance use.
Indiana Lifeline Law

INDIANA LIFELINE LAW
MAKE THE CALL
SAVE A LIFE
Thank you