


Parent Training



To prevent and reduce youth substance abuse in Anderson County by collaborating with community partners to implement effective intervention strategies.

STEPHANIE A. STRUTNER, MPH
EXECUTIVE DIRECTOR


Who We Are




- Non-profit prevention agency
- Established in the fall of 2008
- Coalition of volunteers
 - Representing each sector of the community
 - Anyone is welcome
 - Identify problems; develop solutions
- Three full-time staff



What to Expect




- Why people use drugs
- Health effects of drugs
- Tips to identify impairment or paraphernalia
- Abuse vs Addiction
- The dopamine pathway
- Raising drug-free kids




Why do people use drugs?

- Peer pressure
- Boredom
- "Self-medication" from depression, tension, relief, or to escape
- Curiosity/Recreation
- To "fit in"




Triple Threat

- **High stress**
 - Twice as likely to smoke, drink, get drunk and use illegal drugs
- **Boredom**
 - 50% more likely to smoke, drink, get drunk and use illegal drugs
- **More than \$25 spending money each week**
 - Twice as likely to smoke, drink, get drunk and use illegal drugs



Health Effects of Alcohol and Drugs on the Body: Tips to Identify Impairment and Paraphernalia




Commonly Abused Drugs

- Cannabinoids
- Depressants
- Dissociative Anesthetics
- Hallucinogens
- Opioids (Narcotics)
- Stimulants
- Others (inhalants, steroids)



Cannabinoids


Drug Facts	Methods of Use
<ul style="list-style-type: none">• Marijuana, Hash• Medical uses:<ul style="list-style-type: none">○ None○ Marinol (synthetic compound approved for appetite stimulant/analgesic)• Quick signs of abuse:<ul style="list-style-type: none">○ Causes slowed thinking and reaction time; bloodshot eyes; dilated pupils; impaired motor skills.	<ul style="list-style-type: none">• Smoke• Swallow• Steep in oil• Tincture• Vapor (inhale)



Underage Alcohol Use and Negative Brain Development

- Smaller hippocampus (associated with memory and learning)
- Smaller prefrontal cortex (planning, goal direction)
- Decreased myelination (allows brain to function in a synchronous way)
- Lack of synapse pruning (attention problems and executive function failure seen behaviorally)
- Decrease in spatial memory tasks (less memory retrieval using more areas of the brain)


Dr. Howard Moss, US NIAAA Assistant Director of Clinical Research, *Does Underage Drinking Cause Brain Damage - Convergent Evidence from Imaging Research*




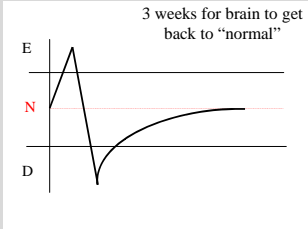
Underage Marijuana Use and Negative Brain Development

- Marijuana users demonstrate more depressive symptoms than controls (linked to lower white matter volume)
- Neurodevelopmental white matter abnormalities disrupt the connections between areas involved in mood regulation


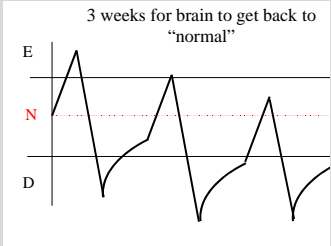
Drs. Medina, Nagel, Park, McQueeney, Tapert, Department of Psychiatry, University of California, San Diego, *Depressive symptoms in adolescents: associations with white matter volume and marijuana use*



Marijuana and the Brain



“Normal” Becomes Less Efficient



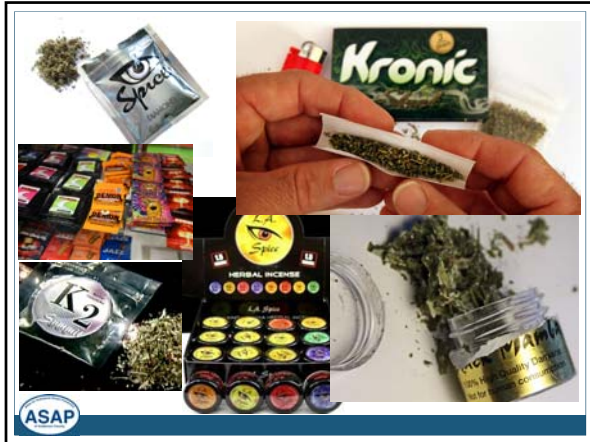


Marijuana Buzzwords

<ul style="list-style-type: none"> • Joint • Bowl • Bong • Blunt • 3750 (marijuana and crack rolled in a joint) • 420 (marijuana use) • A-bomb (heroin laced joint) • Ashes • Astro turf • Aunt Mary • B (amount of marijuana to fill a matchbox) • Baby bhang 	<ul style="list-style-type: none"> • Cheeba • Ganja • Chronic (mixed with crack) • Doby/Doobie • Fatty • Juju • Kentucky Blue • LG (Lime Green) • MJ • Philly Blunt • Queen Anne's lace • Roach • Texas Tea • Wet (soaked in PCP-embalming fluid-and dried)
--	---

Synthetic Cannabinoids

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Synthetic Cannabinoids: K2, Posh, Mr. Smiley, Bliss, Spice, Blue Buddha • Medical uses: <ul style="list-style-type: none"> ○ None • Quick signs of abuse: <ul style="list-style-type: none"> ○ Agitation ○ Excessive sweating ○ Inability to speak ○ Restlessness ○ Aggression 	<ul style="list-style-type: none"> • Swallow • Smoke • Vapor (inhale)



Depressants

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Alcohol, Barbiturates, Benzodiazepines • Medical uses: <ul style="list-style-type: none"> ○ Anesthetic, anticonvulsant, hypnotic, sedative, anti-anxiety, some have no medical use • Quick signs of abuse: <ul style="list-style-type: none"> ○ Drunken-like state; drowsiness; slowed body functions. 	<ul style="list-style-type: none"> • Drink • Eyeball • Enema (butt-chugging) • Alcohol tampons • Snort • Inhale • Inject • Swallow • Sublingual absorption

Alcohol and the Brain

Drinking Patterns	R	F	S	S	M	T	W
Zero							
Friday		Less than 100%					
Friday & Saturday		Less than 100%					
Thursday & Saturday	Less than 100%						
Thursday Saturday Monday	Less than 100%						

Underage Alcohol Use and Negative Brain Development

- Smaller hippocampus (associated with memory and learning)
- Smaller prefrontal cortex (planning, goal direction)
- Decreased myelination (allows brain to function in a synchronous way)
- Lack of synapse pruning (attention problems and executive function failure seen behaviorally)
- Decrease in spatial memory tasks (less memory retrieval using more areas of the brain)

Dr. Howard Moss, US NIAAA Assistant Director of Clinical Research, *Does Underage Drinking Cause Brain Damage - Convergent Evidence from Imaging Research*



Alcohol and the Body

- Decreases anabolic capacity and increases catabolic activity
- Decreases muscle protein synthesis up to 63%
- Decreases levels of growth and sex hormones
 - Decreases testosterone 24-96 hours
 - Decreases HGH 70% (muscle metabolism)
- Increases blood glucose for 36 hours
- Lowers bone density
- Reduces ability to burn fat by 73%



Standard Drink

- What constitutes a standard drink?



High-Risk Drinking

- More than four standard drinks a day for men; three standard drinks a day for women
- One in four heavy drinkers is an alcoholic or has an alcohol-dependency problem



Alcohol

- Most frequently abused drug in our society
- Nearly 17 million Americans meet diagnostic criteria for alcoholism
 - *That is enough to fill Neyland Stadium at a capacity crowd 159 times*



Alcohol and Driving

- BAC limit nation-wide:
 - 0.08%





Depressant Buzzwords

- Adult beverage
- Alcamahol
- Alcopop
- Alky
- Roadie
- Training wheels
- Ass whup
- Cheeky few
- Wounded soldier
- Benzos
- Totem poles
- Z-bars
- School bus
- Handlebars

Dissociative Anesthetics

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Ketamine, Phencyclidine, Dextromethorphan • Medical uses: <ul style="list-style-type: none"> ○ Anesthetic, sedative • Quick signs of abuse: <ul style="list-style-type: none"> ○ Blank stare ○ Difficulty speaking, incomplete verbal responses, repetitive speaking ○ Increased pain threshold ○ Cyclic behavior (trance-like) 	<ul style="list-style-type: none"> • Swallow • Inject • Drink • Snort • Sprinkle on marijuana • Smoke



Dissociative Anesthetic Buzzwords

- Purple Drank
- Special K
- Vitamin K
- Ketaset
- Jet
- Angel Dust
- Embalming Fluid
- Dex
- Robo
- Dexing
- Rojo
- Skittles/Skittling
- Triple C
- Orange Crush
- Robotard
- Tussing
- Vitamin D
- Robo-fizzing

ASAP

Hallucinogens

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • LSD, Psilocybin, Mescaline, Salvia • Medical uses: <ul style="list-style-type: none"> ○ None (humans) • Quick signs of abuse: <ul style="list-style-type: none"> ○ Dazed appearance ○ Body tremors, uncoordinated ○ Poor perception of time and distance 	<ul style="list-style-type: none"> • Liquid drops • Drink • Steep (drink) • Smoke • Snort • Swallow

ASAP



Hallucinogen Buzzwords

- Mesc
- Buttons
- Cactus
- Magic Mushrooms
- Shrooms
- Acid
- Microdot
- White Lightning


Opioids

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Opium, Heroin, Morphine, Hydrocodone • Medical uses: <ul style="list-style-type: none"> ○ Analgesic (painkiller) ○ Antidiarrheal ○ Antitussive • Quick signs of abuse: <ul style="list-style-type: none"> ○ Drowsiness ○ Droopy eyelids ○ Confusion ○ Sedation ○ Track marks 	<ul style="list-style-type: none"> • Swallow • Transmucosal/ Sublingual/Intranasal • Snort • Smoke • Inject • Rectal absorption • Transdermal absorption

Most Commonly Used Opioids in TN


- 2011: 8,449,105 Rx prescribed by 17,555 MD
 - Hydrocodone
 - Oxycodone
 - Morphine
 - Buprenorphine
 - Codeine
 - Fentanyl
 - Oxymorphone
 - Hydromorphone
 - Propoxyphene

2011
TN Population
6.4 Million




More on the Recent Study

- A recent study on the TN CSMP revealed:
 - More than 4 providers—increased risk of death by 6.5 times
 - 8.3% of all patients; 38% of decedents
 - ~150,000 Tennesseans
 - More than 4 pharmacies—increased risk of death by 6 times
 - 2.7% of all patients; 24% of decedents
 - ~50,000 Tennesseans
 - High dosage use—increased risk of death by 11.2 times
 - 1.9% of all patients; 24% of decedents
 - ~57,000 Tennesseans




Opioid Abuse in Tennessee

- Highest risk of death:
 - Methadone
 - Oxymorphone
 - Fentanyl



Neonatal Abstinence Syndrome

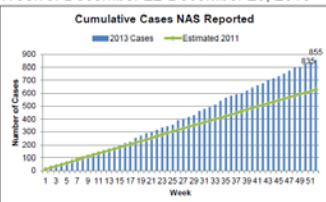
- Hospitals across the country reporting increases of approximately 300% since 2005
- 855 cases in TN in 2013
 - Average wean: 28 days (range 7:155)
 - 11% at ETCH from Methodist Medical Center



Drug Dependent Newborns (Neonatal Abstinence Syndrome) Surveillance Summary For the Week of December 22-December 28, 2013 (Week 52)¹

Reporting Summary (Year-to-date)
 Cases Reported: 855
 Male: 500
 Female: 355
 Unique Hospitals Reporting: 80

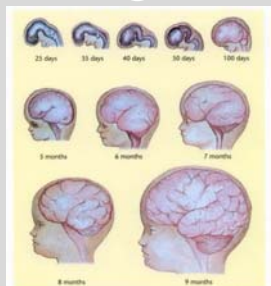

Maternal County of Residence (by Health Department Region)	# Cases	% Cases
Davidson	34	4.0%
East	240	28.1%
Hamilton	17	2.0%
Jackson/Madison	2	0.2%
Knox	99	11.6%
Mid-Cumberland	57	6.7%
North East	124	14.5%
Shelby	18	2.1%
South Central	27	3.2%
South East	12	1.4%
Sullivan	84	9.8%
Upper Cumberland	110	12.9%
West	31	3.6%
Total	855	100%



Source of Maternal Substance (if known?)	# Cases ²	% Cases
Supervised replacement therapy	397	46.4%
Supervised pain therapy	165	19.3%
Therapy for psychiatric or neurological condition	67	7.8%
Prescription substance obtained WITHOUT a prescription	341	39.9%
Non-prescription substance	236	27.6%
No known exposure but clinical signs consistent with NAS	11	1.3%
No response	19	2.2%

1. Summary reports are archived weekly at: http://health.tn.gov/ICN/NAS/NAS_Summary_Archive.xlsx
 2. Multiple maternal substances may be reported; therefore the total number of cases in this table may not match the total number of cases reported.

NAS and Gestational Brain Development

Prenatal Exposure and Brain Development

- All legal and illegal drugs affect brain development
- Effects are dependent upon stage of gestation
- Stages:
 - Dorsal induction (3-4 weeks)
 - Ventral induction (5-6 weeks)
 - Neuronal proliferation (2-4 months)
 - Migration (3-5 months)
 - Organization (6 months – years postnatal)
 - Myelination (birth – years postnatal)






Opiate Buzzwords

- Belushi
- Black Tar
- Bobby
- Diesel
- Oxy
- Schmeck
- Skag
- Watson
- Hydros
- Vikes
- Norco
- Blues
- Octagons
- Stop Signs




Stimulants

Drug Facts	Methods of Use
<ul style="list-style-type: none">• Caffeine, Nicotine, Amphetamine, MDMA, Methylphenidate, Cocaine• Medical uses:<ul style="list-style-type: none">○ Narcolepsy○ ADHD• Quick signs of abuse:<ul style="list-style-type: none">○ Increased energy○ Nervousness○ Bruxism	<ul style="list-style-type: none">• Swallow• Snort• Smoke• Inject




Energy Drinks

- In 2006, annual worldwide energy drink consumption increased 17% from the previous year to 906 million gallons (Reissig et al., 2008)
- Considered “Nutritional Supplements”
 - FDA has little to no oversight



Caffeine Regulations

- FDA Regulation:
 - Caffeine content shall fall within 65 mg/12 oz for liquid beverage and 200 mg for pills
- Natural sources of caffeine, including coffees, teas, and chocolates go largely unregulated and unnoticed by the FDA




Common Caffeinated Products

Product	mg of Caffeine
2 tablets, Excedrin, Extra Strength	130
Hershey's Chocolate Bar	9
1 tablet, NoDoz, Maximum Strength	200



Common Caffeinated Drinks


Beverage	mg of Caffeine
Decaf. brewed coffee	2
1 oz. espresso	64
8 oz. instant coffee	62
8 oz. brewed coffee	95
16 oz. Starbucks Grande brewed coffee	330
12 oz. Nestea	17
12 oz. Cherry Coke	35
12 oz. Diet Coke	47
12 oz. Dr. Pepper	41
12 oz. Mountain Dew	54



Common Energy Drinks


Beverage (12 ounces)	mg of Caffeine
AMP	107
Full Throttle	108
Red Bull	110
Rockstar	120
SoBe No Fear	131
Vault	71
NOS	195



12 oz. Cherry Coke	35
--------------------	----



Warnings


- 5-Hour Energy
 - ✦ “You may experience a Niacin Flush that lasts a few minutes.”
- *Limit 1 can per day. Not recommended for children, pregnant women, or people sensitive to caffeine (Monster Heavy Metal)*
- Some may contain alcohol
- Some have an “Energy Blend” of caffeine, taurine, guarine and you don’t know how much you are consuming
- Some cans/bottles have up to 4 servings per container



Tobacco

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Cigarettes, Dip, Snuff, Cigars, Cigarillos, Bidis • Medical uses: <ul style="list-style-type: none"> ○ No medical use • Quick signs of abuse: <ul style="list-style-type: none"> ○ Bad breath, wheezing, coughing, yellow-stained teeth and fingers, frequent colds, mouth sores. 	<ul style="list-style-type: none"> • Smoke • Hookah (water pipe) • Chew • Dip • Snort • Transdermal absorption



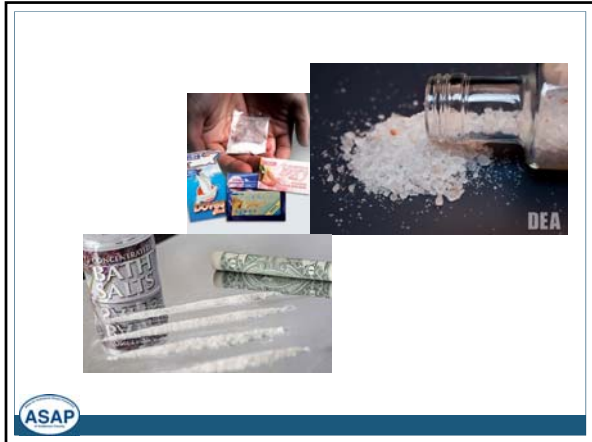


Tobacco Buzzwords

- Cancer stick
- Square
- Cig
- Chew

Synthetic Cathinones

Drug Facts	Methods of Use
<ul style="list-style-type: none"> • Synthetic Cathinones: Bath Salts • Medical uses: <ul style="list-style-type: none"> ○ None • Quick signs of abuse: <ul style="list-style-type: none"> ○ Euphoria ○ Increased sex drive ○ Paranoia ○ Agitation ○ Hallucinatory delirium ○ Psychotic, violent behavior 	<ul style="list-style-type: none"> • Swallow • Smoke • Snort • Inject



Abuse

- Using a substance to modify or control mood or state of mind in a manner that is illegal or harmful to oneself or others
 - Intentional, Recreational, Unintentional
 - Can lead to addiction
- Consequences
 - Accidents/injuries
 - Blackouts
 - Legal, family, and health problems
 - Problematic sexual behavior

ASAP


Addiction

- A brain disease expressed as a compulsive behavior
- The continued abuse of drugs despite negative consequences
- A chronic, progressive, potentially relapsing disorder

ASAP


Addiction and the Brain

- **DOPAMINE**
 - Dopamine functions as a neurotransmitter
 - Dopamine has many functions in the brain, including important roles in behavior and cognition, motor activity, motivation and reward, sleep, mood, attention, and learning.




The Dopamine Pathway

- **The brain contains a natural reward system**
 - This increases temporary levels of dopamine
- **What triggers these rewards?**
 - Food
 - Exercise
 - Sex




Why is this important?

- **Drugs activate the same system activated by natural rewards**
 - BUT...drugs activate the system stronger and longer
- **Drugs "hijack" the brains dopamine system and the brain becomes dependent on the drug**




Why does this happen?

- The brain becomes dependent on a drug because natural rewards no longer produce the same dopamine levels which result in a feeling of pleasure
- After a while, use of a drug leads to an adaptation in the brain





Then What?

- The addicted brain reduces natural production of dopamine
 - Why? The brain is used to receiving a huge amount of dopamine caused by drug use
- The deficit in dopamine causes an inability to feel pleasure, except through drug use



B.F. Skinner

- Operant conditioning chamber
 - Rats pressed levers
 - × 1 lever for food/water
 - × 1 lever for electrical sock
 - Confirmed reinforcing behavior



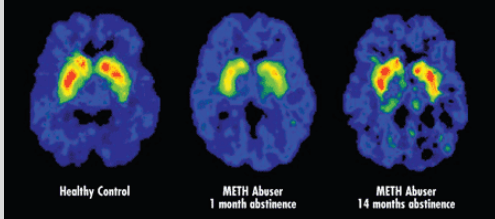
Olds and Milner (1950s)

- Metal electrodes implanted in nucleus accumbens
- Rats preferred stimulus more than any naturally occurring stimulus
- Rats would press the lever 700 times per hour to stimulate the pleasure center of the brain
- Preferred stimulus over food and water
- Eventually died from exhaustion
 - Females abandoned newborns nursing
 - Males ignored females in heat



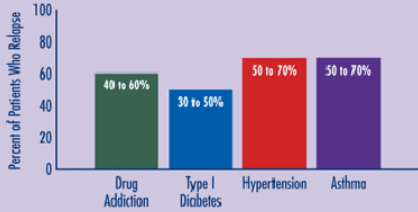
Can brains recover from addiction?

RECOVERY OF BRAIN FUNCTION WITH PROLONGED ABSTINENCE



Relapse Does Not Mean Failure

COMPARISON OF RELAPSE RATES BETWEEN DRUG ADDICTION AND OTHER CHRONIC ILLNESSES



Stop Drug Use Before It Starts!


- **Are you a parent?**
 - Adolescents with parents who are fully engaged in their lives are far less likely to use drugs.
 - Express your disapproval of drug use to your children before they are exposed to drugs.
 - Teach your children to respect their health
 - Teach your children how to stand up for themselves

Need resources? www.nida.nih.gov



5 Question Family Check-up

1. Are you able to communicate calmly and clearly with your teenager regarding relationship problems?
2. Do you encourage positive behaviors in your teenager on a daily basis?
3. Are you able to negotiate emotional conflicts with your teenager and work toward a solution?
4. Are you able to calmly set limits when your teenager is defiant or disrespectful? Are you able to set limits on more serious problem behavior such as drug use, if or when it occurs?
5. Do you monitor your teenager to assure that s/he does not spend too much unsupervised time with peers?



Tips for Parents

- Monitor and safeguard alcohol and medicine in the home
- Properly dispose of expired and unused medicine
- Be a positive influence
- Participate in activities important to your child

