

Addressing Adolescent Prescription Drug Abuse

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- 11.7 years old
- 20% greater
- 1 out of 5 kids
- 91% pure
- 38%/19%
- 40% chance
- Participation in HS sports
- 50% Genetics

New Trends

Binge drinking

Over the counter

Prescription Drugs (“pharming” and
“bowling”)

Girls competing with boys

Increased purity (heroin and marijuana)

**In 2004, An Estimated
22 Million Americans
Were Dependent On or Abused
Any Illicit Drugs or Alcohol**

**But...Only 3.3 Million (15%)
of These Individuals
Had Received Some Type of
Treatment In the Past Year**

NEW CANAAN SURVEY

- 700 STUDENTS IN GRADES 8, 10 and 12 at Saxe Middle School and New Cannan High School
- The Survey of Student Resources and Assets (Administered April 2005)

New Canaan Survey

- 21 of 40 Developmental Assets
- Family Support-76% of youth
- Positive Family Communication-42%
- Caring School Climate-34%
- Community values youth-23%

New Canaan Survey

- Family Boundaries and Expectations-47%
- School Boundaries and Expectations-43%
- Adult Role Models-37%
- Creative Activities-22%
- Youth Programs-81%

New Canaan Survey

- Peaceful Conflict Resolution

 - Boys-27%

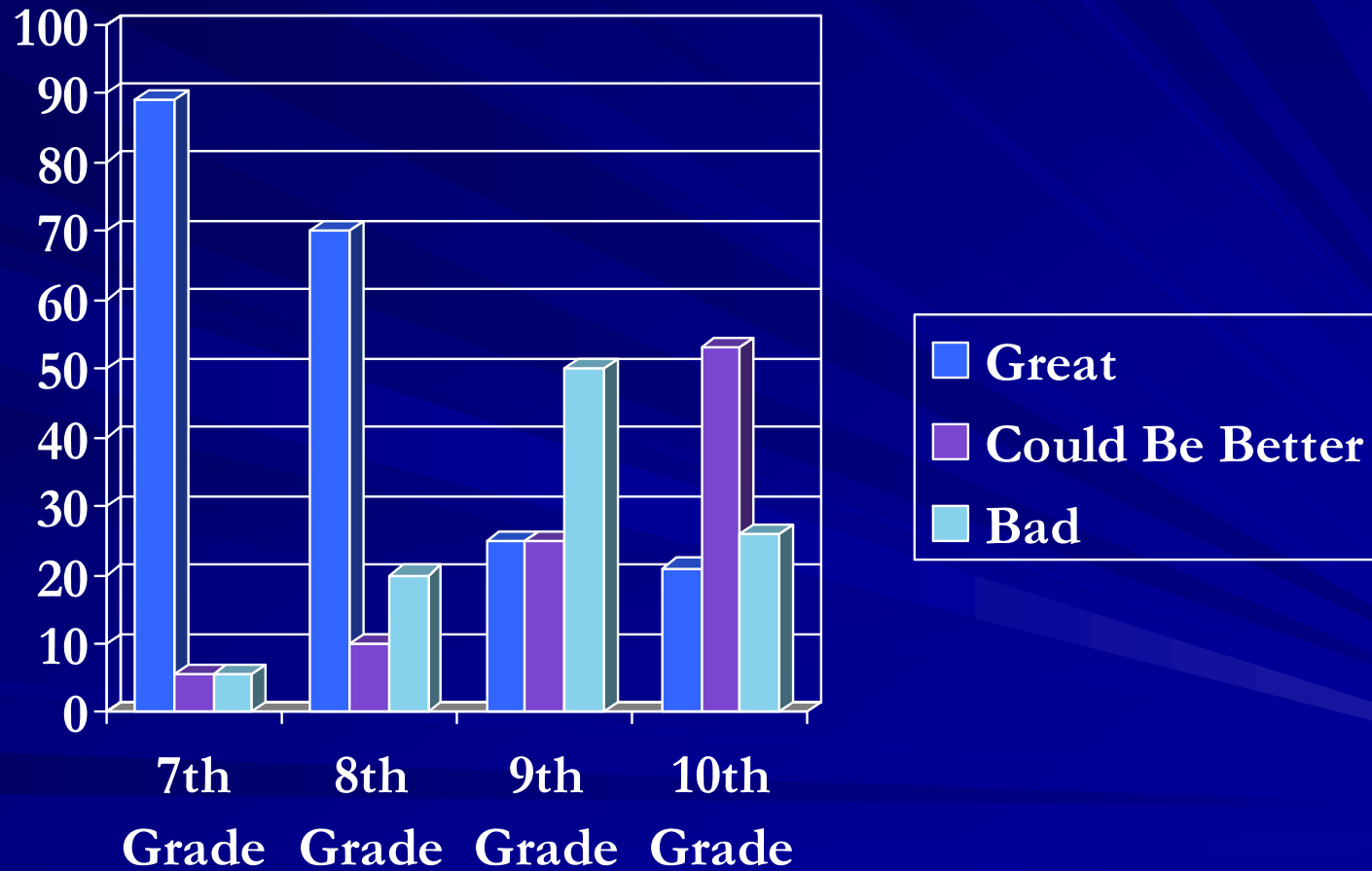
 - Girls-68%

- Self Esteem

 - Boys-63%

 - Girls-49%

How do your kids view your relationship?



If you could, what would you change about your relationship with your dad?

The top 5 answers:

5. Trust me more
4. Be home more
3. Be more understanding
2. Spend more time together
1. Communicate more.

HONESTY

- 56% of students surveyed said they are NOT honest with their fathers



HONESTY

- Only 35% of students surveyed believes their father is honest with them.



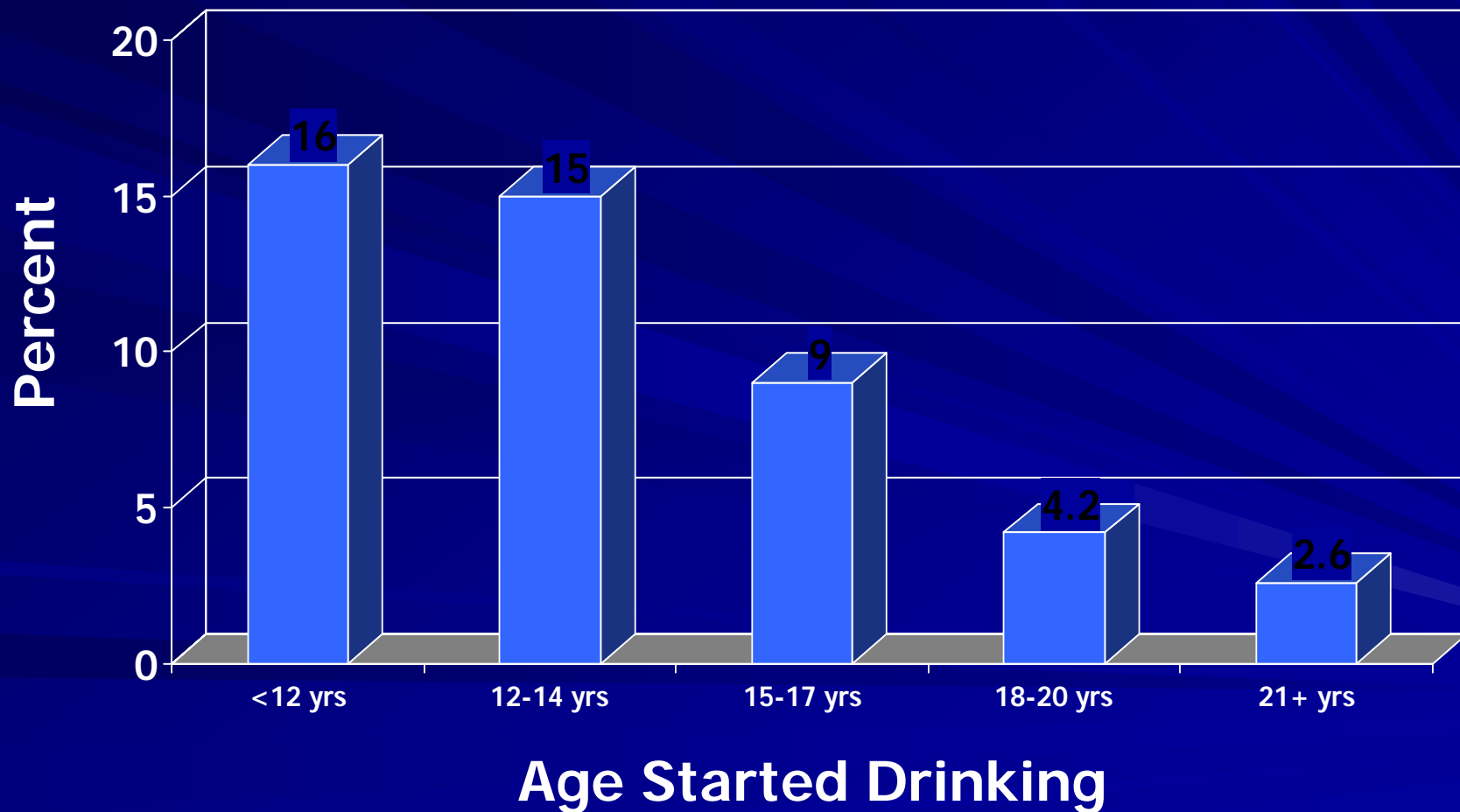
Amidst all the pressures, there is the feeling that parents do not help to alleviate the pressure. Rather they exacerbate it by applying more pressure to excel, be well rounded, get good grades, etc.

There is a perception among many students that parents contribute to the pressures. Many seemed to be seeking acceptance for who they were rather than for who their parents wanted them to be.

Can Addiction be Prevented by Delaying Drug Use Onset?

- **Every year use of a substance is delayed, the risk of developing a substance use disorder is reduced.**

Percentages of Past Year Alcohol Dependence or Abuse Among Adults Aged 21 or Older, by Age of First Use (SAMHSA, 2004)



What is adolescence?



- **Adolescence is a period of profound brain maturation.**
 - It was believed that brain development was complete during childhood
 - The maturation process is not complete until about age 24!!!

INSIDE THE ADOLESCENT BRAIN

The brain undergoes two major developmental spurts, one in the womb and the second from childhood through the teen years, when the organ matures by fits and starts in a sequence that moves from the back of the brain to the front.

Nerve Proliferation ...



By age 13 for girls and 15 for boys, the neurons in the back of the brain have formed thousands of new connections. Over the next few years, more of these links will be pruned.

Corpus Callosum

Thought is an intricate and intricate web of connections. The bundle of nerve fibers connects the left and right hemispheres of the brain. It's the highway that carries the messages that control our actions and perceptions.

Prefrontal Cortex

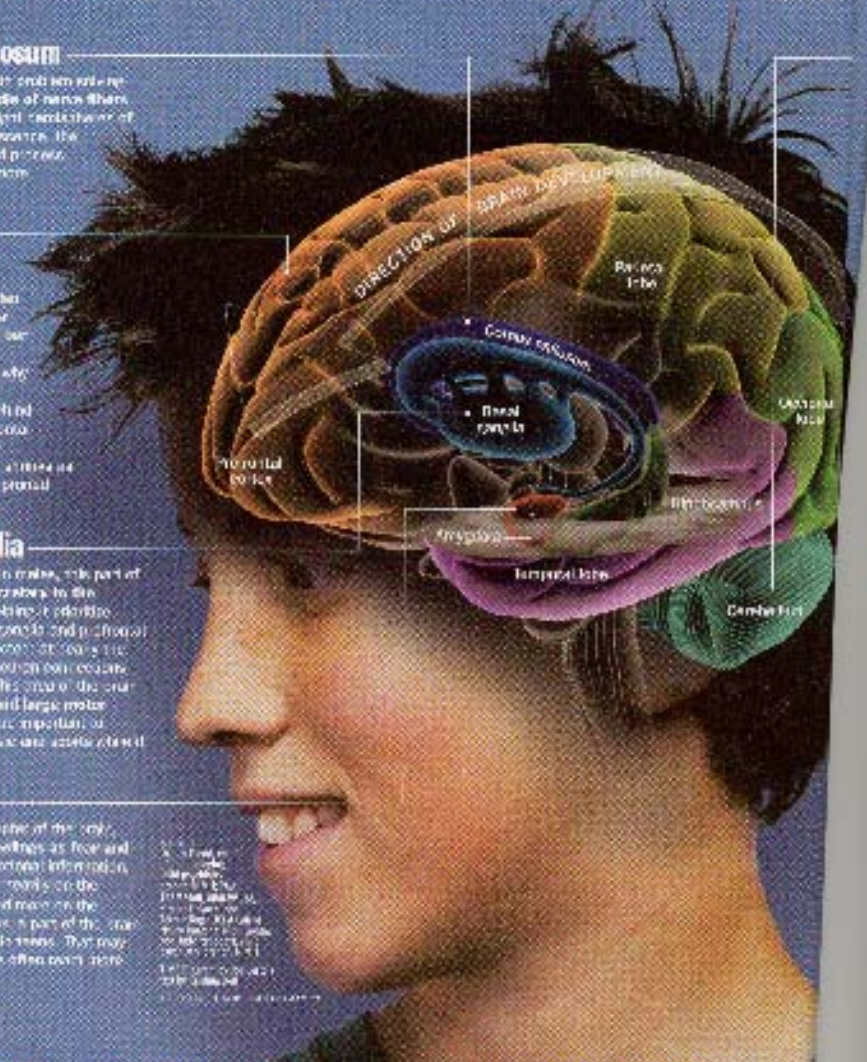
The CEO of the brain, the prefrontal cortex is the seat of our second thoughts. It's the part of the brain that makes us think about our actions, weigh the pros and cons, and make the best decision possible. It's the part of the brain that grows during the pre-adolescent years and then continues to develop and mature during adolescence.

Basal Ganglia

Large collection of brain tissue, this part of the brain acts like a conductor in the prefrontal cortex, helping it identify information. The basal ganglia and prefrontal cortex are closely connected. It's the part of the brain that helps us learn from our mistakes and from our triumphs. The basal ganglia is the part of the brain that helps us learn from our mistakes and from our triumphs. It's the part of the brain that helps us learn from our mistakes and from our triumphs.

Amygdala

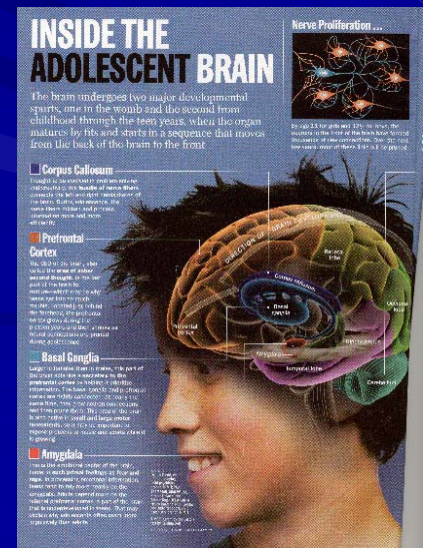
The so-called emotional center of the brain, the amygdala is the seat of our feelings. It's the part of the brain that helps us learn from our mistakes and from our triumphs. It's the part of the brain that helps us learn from our mistakes and from our triumphs.



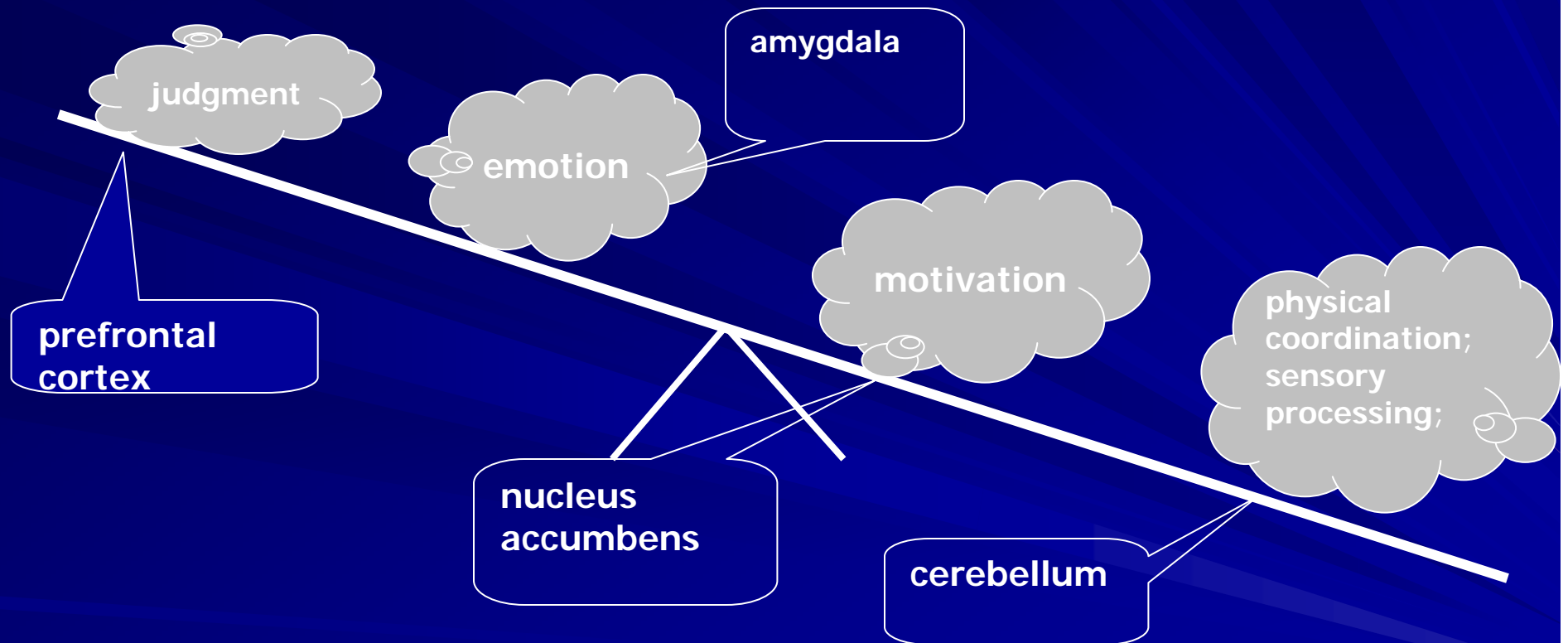
Arrested Development



- **Back of brain matures before to the front of the brain...**
 - **sensory and physical activities favored over complex, cognitive-demanding activities**
 - **propensity toward risky, impulsive behaviors**
 - **group setting may promote risk taking**
 - **poor planning and judgment**



Pruning occurs in stages, from back of the brain to the front



Age 24

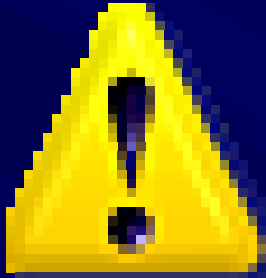


judgment

emotion

motivation

physical
coordination
; sensory
processing;



Are adolescents more susceptible to alcohol than adults?

Increases reinforcing properties

1. Reduced sensitivity to intoxication
2. Increased sensitivity to social disinhibitions
3. Medicates “hyper excitability”



**Are adolescents more
susceptible to alcohol than
adults?**

Greater deficits

**4. Greater adverse effects to
cognitive functioning**

Why do people take drugs?

To feel good
To have novel:
Feelings
Sensations
Experiences
AND
To share them

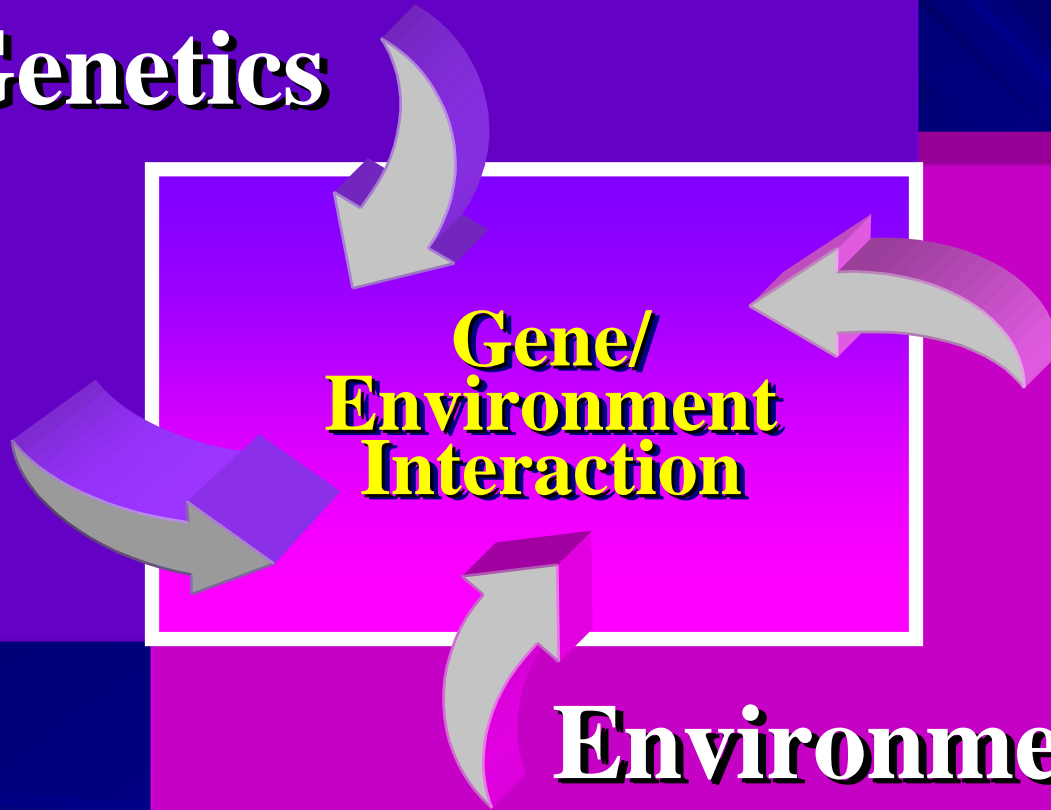


To feel better
To lessen:
Anxiety
Worries
Fears
Depression
Hopelessness
Withdrawal

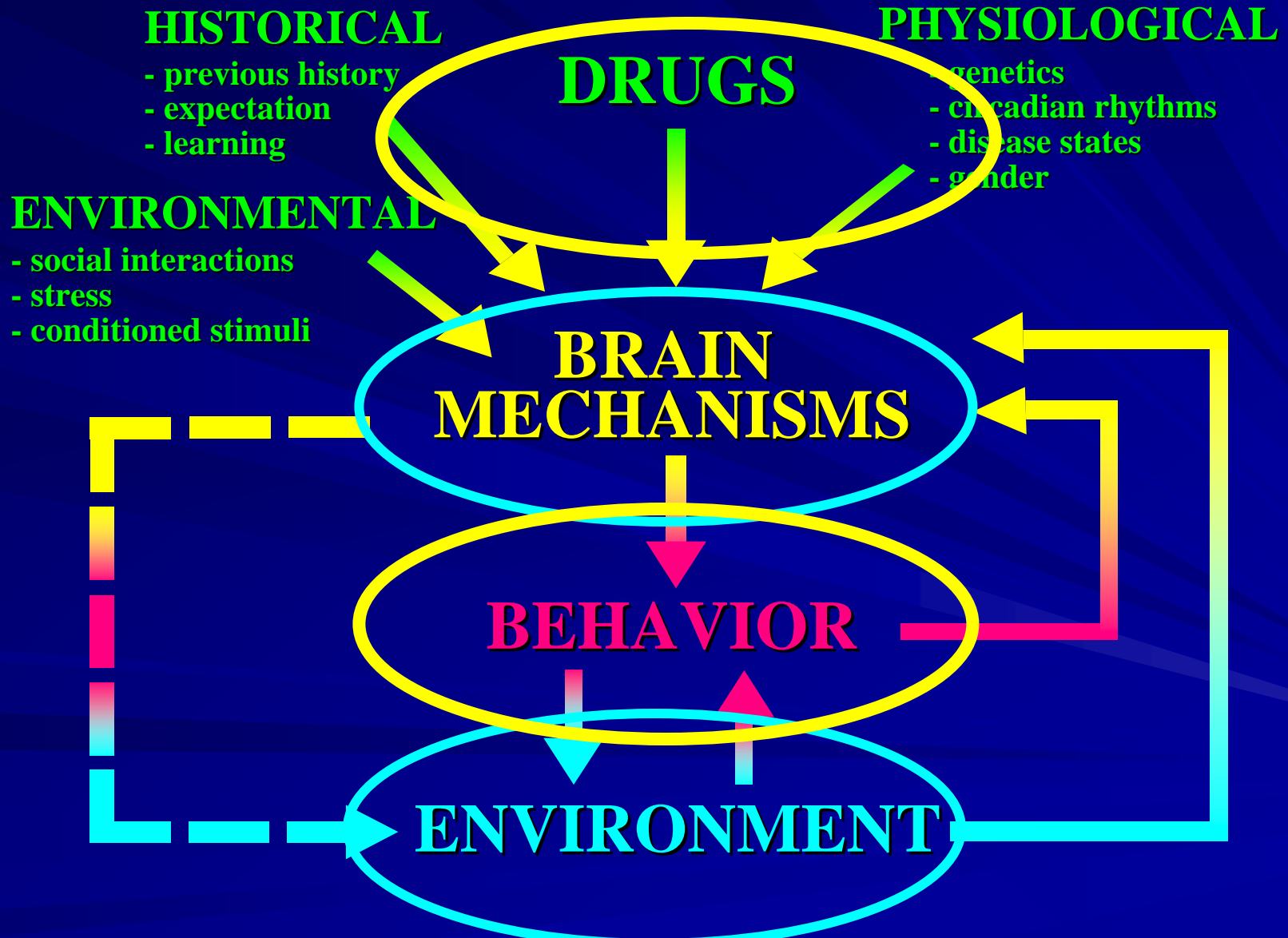
Genetics

**Gene/
Environment
Interaction**

Environment

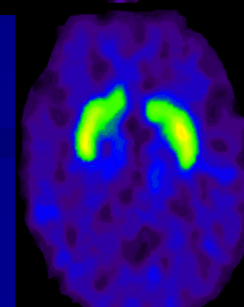
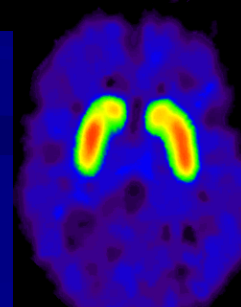
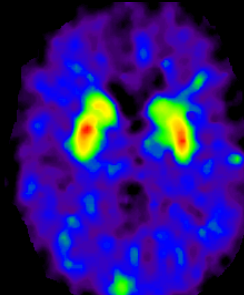
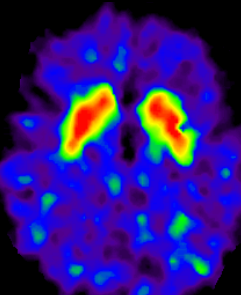
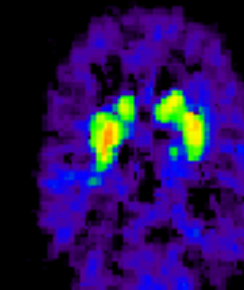
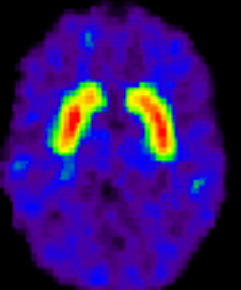
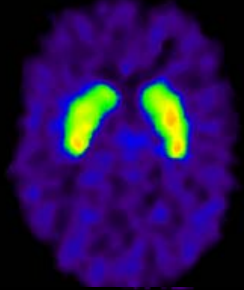
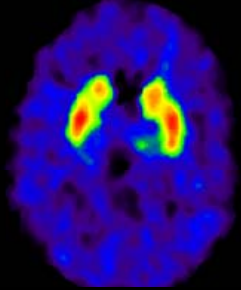
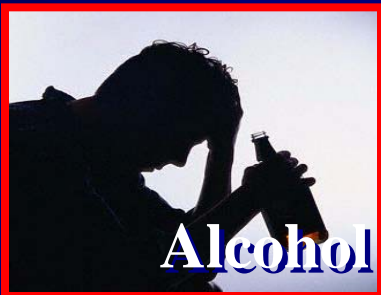


Drug Addiction: A Complex Behavioral and Neurobiological Disorder



■ INCREASED
EXPOSURE
INCREASES RISK

Dopamine D2 Receptors are Lower in Addiction



control

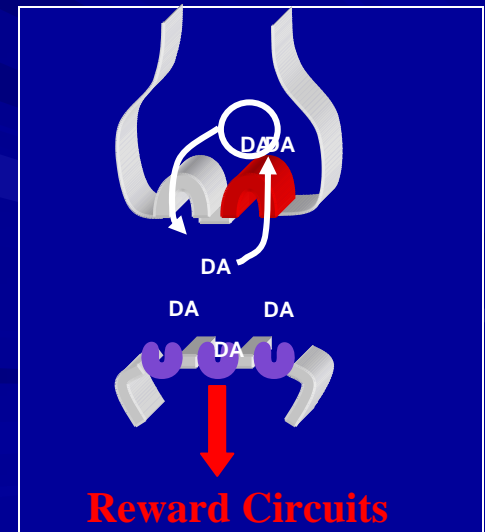
addicted



DA D2 Receptor Availability



Reward Circuits
Non-Drug Abuser

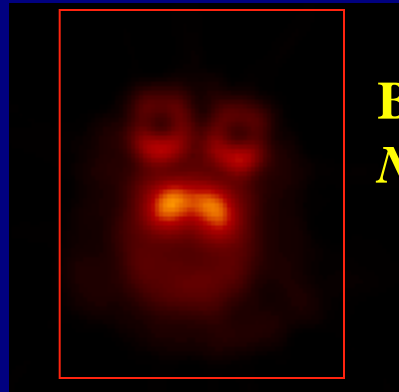


Reward Circuits
Drug Abuser

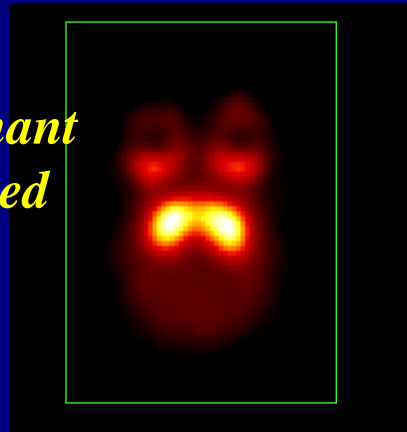
Effects of a Social Stressor on Brain DA D2 Receptors and Propensity to Administer Drugs

Individually Housed

Group Housed

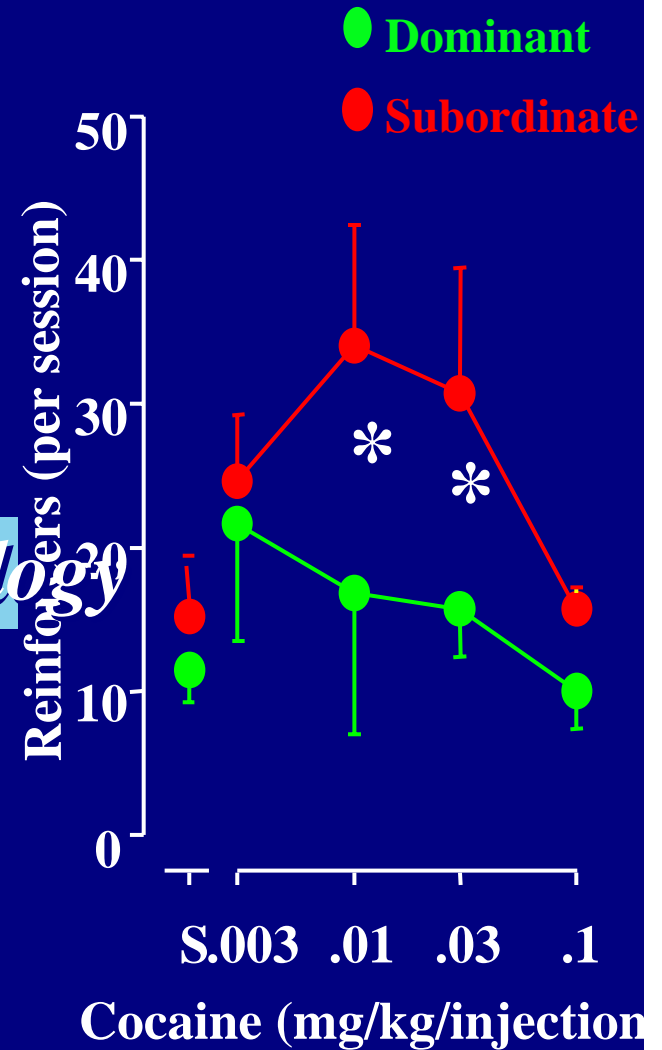
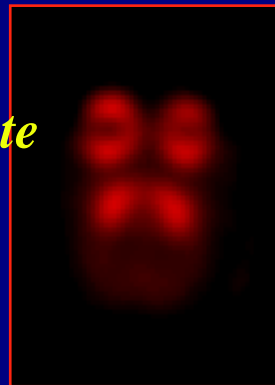
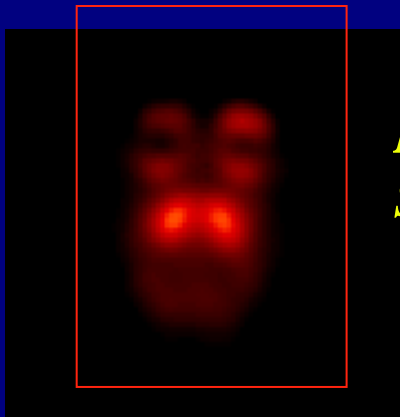


Becomes Dominant
No longer stressed



Isolation Can Change Neurobiology

Becomes Subordinate
Stress remains



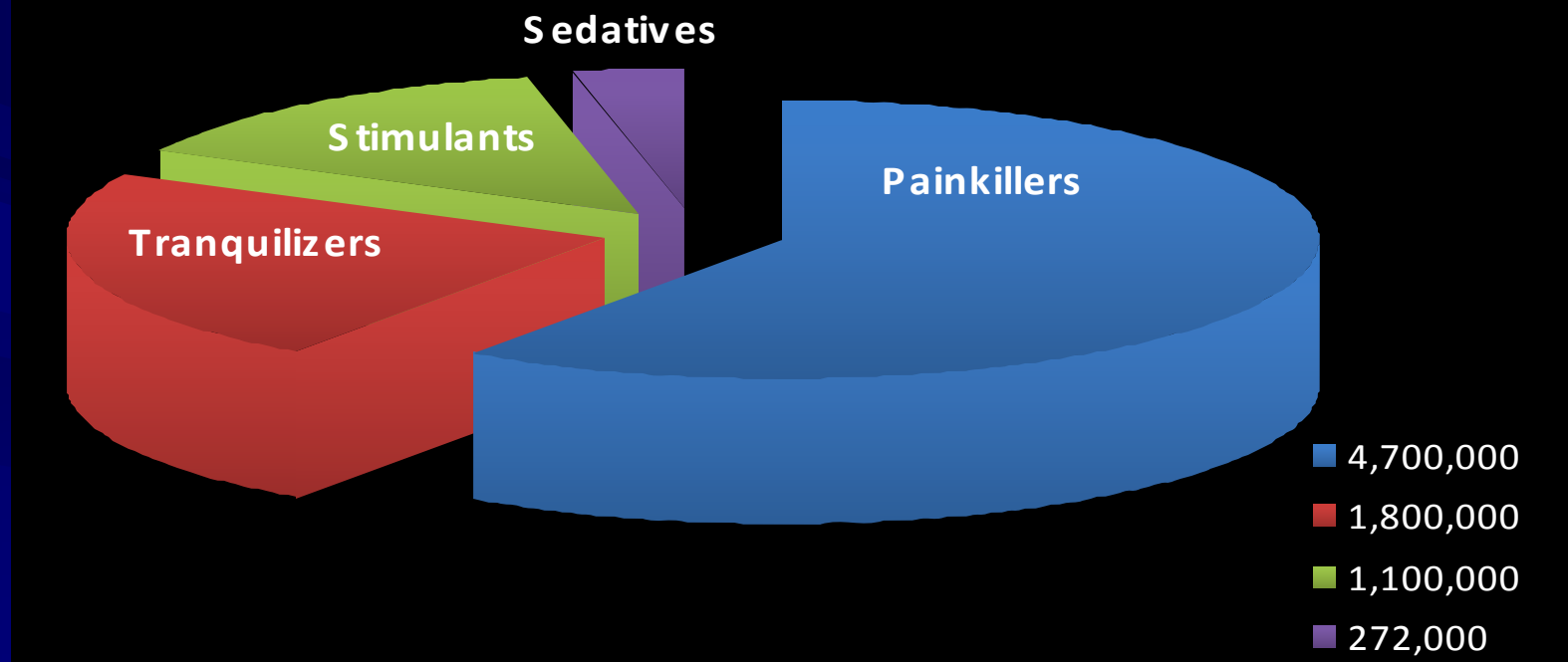
Morgan, D. et al. Nature Neuroscience, 5: 169-174, 2002.

Demographics of prescription drug misusers

- In 2006, a study sponsored by a Partnership for a Drug-Free America (PDFA) that 1 in 5 teens misuse prescription drugs. This finding is significant as youth believe that painkillers are a "safer" way to get high as opposed to illicit drugs.
- The Partnership Attitude Tracking Study found that 62% of youth reported access to "powerful painkillers" at home while 52% reported that prescription drugs were "available everywhere".

(Join Together, 2006)

Reported Non-Medical Prescription Drugs of Abuse (2005)



(Substance Abuse and Mental Health Services Administration [SAMHSA], 2005)

Prescription Drug Abuse

In 2002, an estimated 6.2 million people – 2.6% of the population aged 2 and older were currently (in last month) using prescription drugs non-medically (up from 4 million in 1999)

Pain relievers – 2.6 million users

Sedatives/tranquilizers – 1.3 million users

Stimulants – 4 million users

Demographics of prescription drug misusers

- Among adolescents and young adults, prescription drug abuse is highest nationally among young adults aged 18-25 years old.
- The National Institute on Drug Abuse's Monitoring the Future survey in 2005 found that 12 graders reported using OxyContin and Vicodin without a prescription. Vicodin is one of the most commonly abused illicit drug among adolescents and young adults.
- This is a concern since youth who use other drugs are likely to abuse prescription medications.

Prescription drug use in America

- **The National Surveys on Drug Use and Health (NSDUH) asked non-medical users of prescription-type psychotherapeutic drugs regarding how they obtained the drugs they recently used non-medically.**
- **In 2005, the most prevalent source from which recently used drugs were obtained among non-medical users of prescription-type drugs was "from a friend or relative for free.**
- **Among persons aged 12 or older who used pain relievers non-medically in the past 12 months, 59.8% reported that the source of the drug the most recent time they used was from a friend or relative for free.**

(Substance Abuse and Mental Health Services Administration [SAMHSA], 2005)

Demographics of prescription drug misusers

- **Men and women have similar rates of non-medical use of prescription drugs. Gender differences in prescription drug abuse can be observed among girls aged 12-17 years old.**
- **Women are at increased risk of abusing benzodiazepines like analgesics and tranquilizers.**

(National Institute on Drug Abuse [NIDA], 2005)

Rx Opiate User Heroin User

✓ White

✓ Rural, suburban

✓ Higher SES

✓ Minority

✓ Urban

✓ Lower SES

Commonly used prescription drugs

- **The most commonly abused prescription drugs can be classified in three classes:**
 - Opioids
 - Central Nervous System
 - Stimulants

(National Institute on Drug Abuse [NIDA], 2005)



Commonly used prescription drugs

- **Opioids are mostly used to treat pain.**
 - Some examples of opioids are codeine, morphine, and opium.
- **Central nervous system (CNS) depressants are used to treat anxiety and sleep disorders.**
 - Some examples of CNS depressants are flunitrazepam, barbiturates, and benzodiazepines.
- **Stimulants are prescribed to treat the sleep disorder narcolepsy and attention-deficit hyperactivity disorder (ADHD).**
 - Some examples of stimulants are cocaine, methamphetamine, and amphetamines.

(National Institute on Drug Abuse [NIDA], 2005)

Effects of prescription drug abuse

- While CNS depressants, opioids, and stimulants affect the body in various ways, their misuse and abuse can have long-lasting or deadly effects.
- For example, opioids can produce drowsiness and nausea, and at large dosages, can depress or stop respiration.
- As your body become use to the physiological affects of CNS depressants, individuals may need larger doses to produce the same effects—leading to physical dependence.

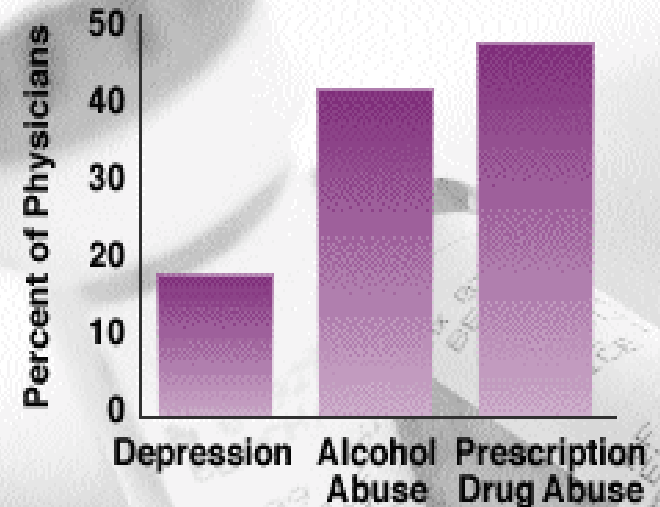
(National Institute on Drug Abuse [NIDA], 2005)

Preventing prescription drug abuse/misuse

Increasing the role of the physician

- Prescription drug abuse prevention is an important part of patient care.
- Nearly 70 percent of Americans (191 million people) - visit a health care provider, such as a primary care physician, at least once every 2 years.
- Accurate screening and increases in medication should be carefully monitored by physicians as well as the patient receiving the medication.

Many Physicians Have Difficulty Discussing Substance Abuse With Patients



Over 40% of physicians report having difficulty discussing substance abuse, including abuse of prescription drugs, with their patients. In contrast, less than 20% have difficulty discussing depression.

(National Institute on Drug Abuse [NIDA], 2001)

Warning signs of potential prescription drug abuse

- You take more pain medication than your doctor has prescribed.
- You request prescriptions from multiple doctors.
- You use alcohol or other medications to increase the effects of the pain medication.
- You take pain medication to deal with other problems, such as anxiety or stress.
- Your doctor, friends or loved ones express concern about your use of pain medication.

(The Mayo Clinic, 2006)

School-based prevention

- Among school-age children and adolescents who may be at risk of non-medical use of pharmaceuticals, McCabe, Teter, & Boyd (2004) suggest that physicians, parents, pharmacists, school nurses, social workers, counselors, and principals be educated about the prescription drug misuse.
- Other school administrators such as school nurses, social workers, etc. can help monitor which students are prescribed medications and may be at risk for prescription drug diversion.

The Heroin Epidemic

- ONDCP estimated nearly 1 million opioid dependent individuals in 2000
 - Less than 1 in 5 receive any treatment
 - Numbers are likely to be grossly inaccurate
- 104,000 new users in 1999 alone
- Emergency Room Visits 1991 – 1995
 - Doubled from 36,000 to 76,000

The Heroin Epidemic

Why is heroin use growing?

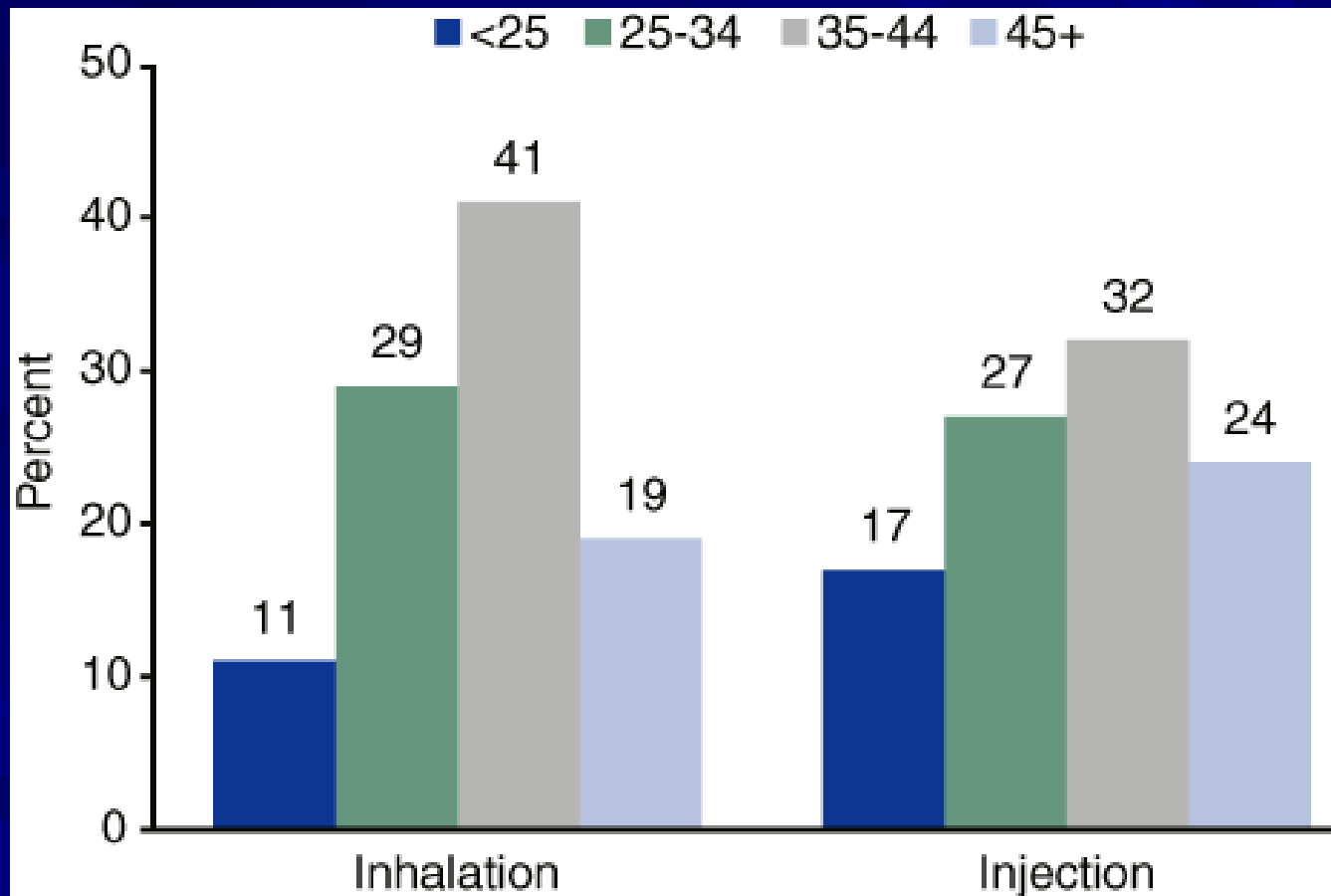
- Lower price
- Longer “high”
- Increasing purity
 - Nasal inhalation
- Increased availability
- Reduced social stigma around use
- Opiate prescriptions leading to heroin use
 - Oxycodone, hydrocodone, & codeine

The Heroin Epidemic

- Injection most common route of administration, followed closely by inhalation
- Significant portion of recent users were smoking, snorting or sniffing
 - 171 % increase in heroin inhalation admissions between 1992 – 2002
 - 33 % of all SUD admissions

The Heroin Epidemic

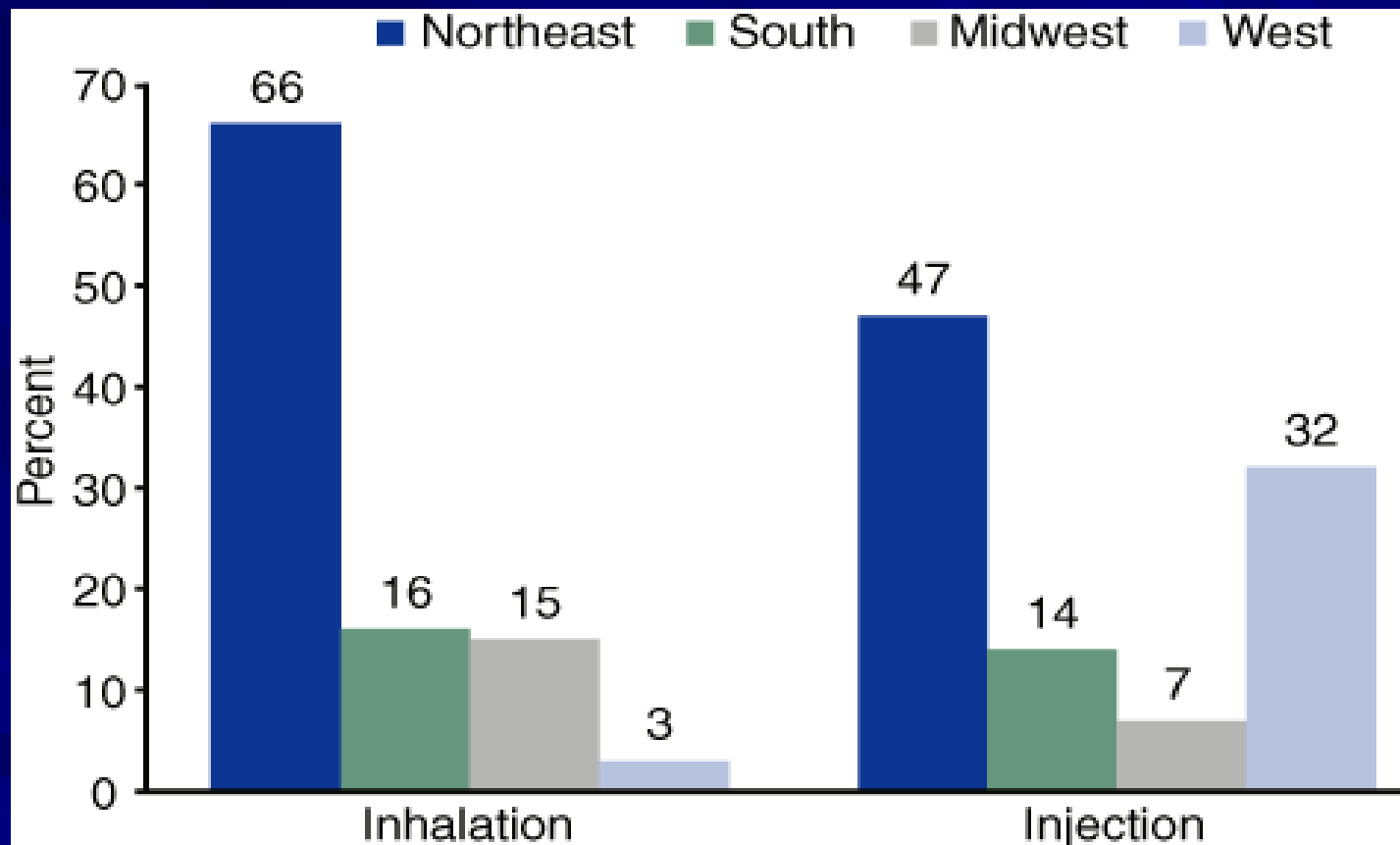
Figure 2. Primary Heroin Admissions, by Route of Administration and Age Group: 2002



<http://oas.samhsa.gov/2k4/heroin/heroin.htm>

The Heroin Epidemic

Figure 3. Heroin Admissions, by Primary Route of Administration and Region: 2002



<http://oas.samhsa.gov/2k4/heroin/heroin.htm>

Trends in heroin route of administration TEDS 1992-1997

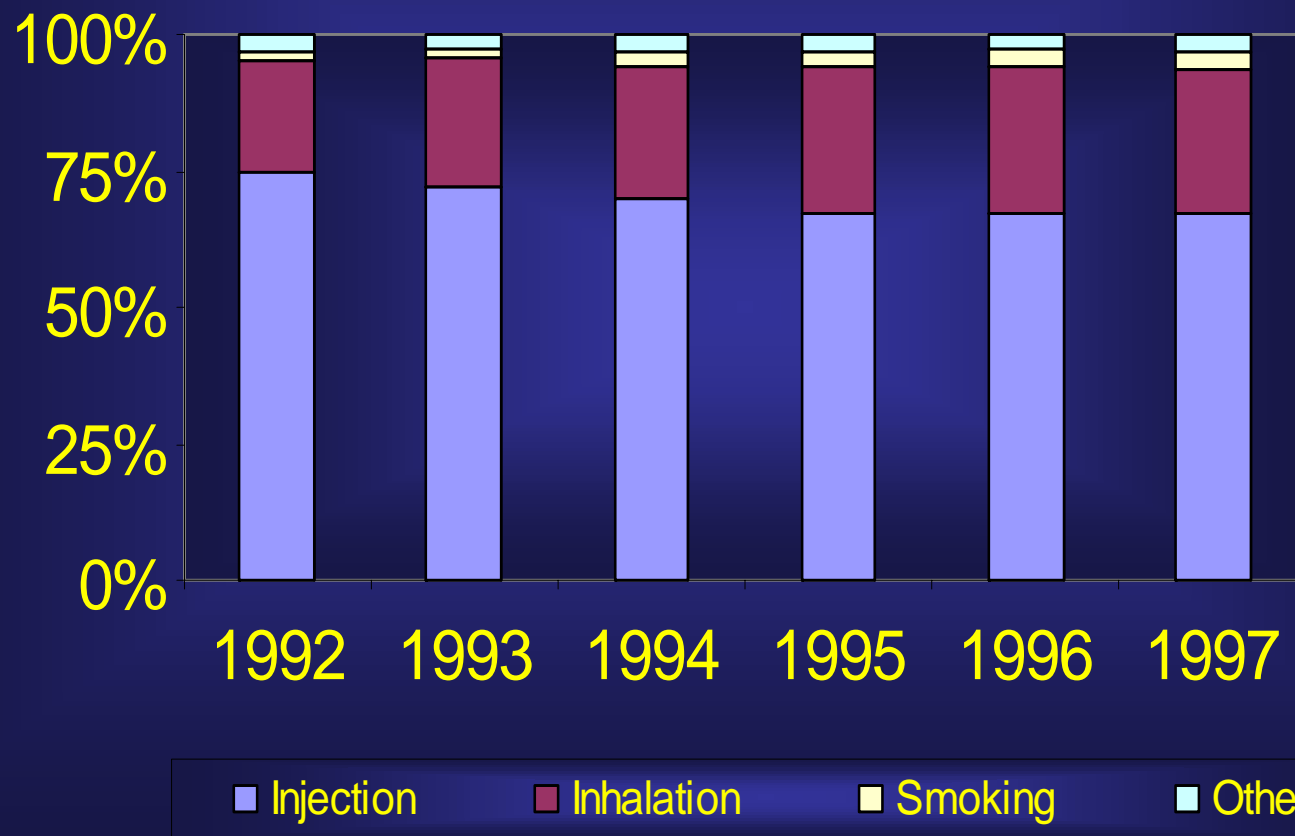
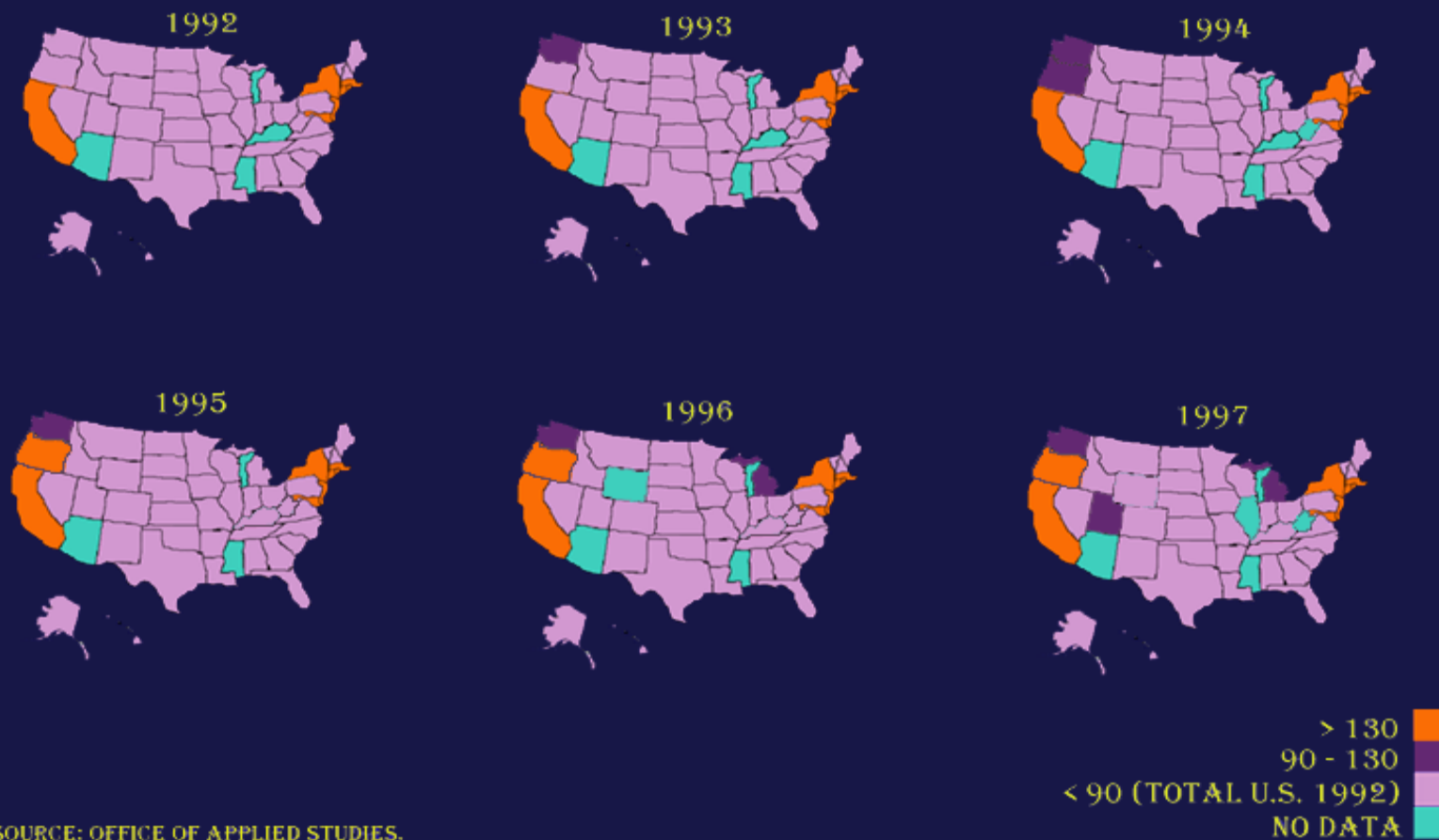


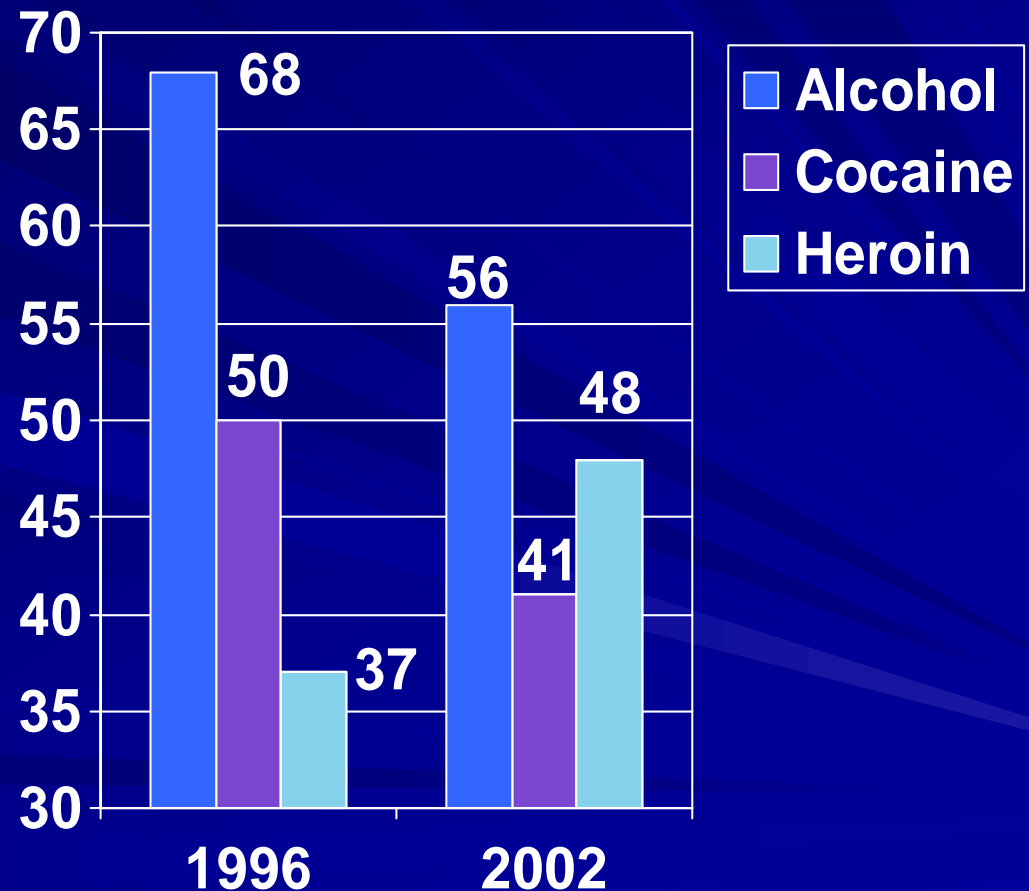
FIGURE 4
PRIMARY HEROIN ADMISSION RATES BY STATE: 1992-1997
(PER 100,000 POPULATION AGED 12 AND OVER)



SOURCE: OFFICE OF APPLIED STUDIES,
SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION,
TEDS - 1.30.99

The Heroin Epidemic

- Major reduction in Alcohol and Cocaine admissions from 1996 to 2002
- Heroin increases significantly over the same period



DMHAS – Connecticut & UConn
Getting Better: A Study of Addiction Services
in Connecticut
Admission Statistics – Self-Identified
problem substance at admission to treatment

Heroin and Methadone: A comparison

Heroin

Fast Acting
4 – 6 hours
4 – 6 times per day
High Overdose Potential
Potentially Lethal
High Potential for Abuse
Withdrawal in 3 – 4 hours

Methadone

Slow Acting
24 – 36 hours
1 time per day
Low Overdose Potential
Non-toxic*
Low Potential for Abuse*
After 24 hours

* For those patients on a stable dose

■ Agonists

- Compounds that activate *their* receptors
 - Activation “turns on” the receptor and initiates action potential of receptor
 - These have the greatest abuse potential because they produce increasing effects as dose increases

Morphine

Hydrocodone

Heroin

Oxycodone

Codine

Methadone

■ Antagonists

- Compounds that block activation of receptors
 - Prevents receptors to bind to natural fit compounds

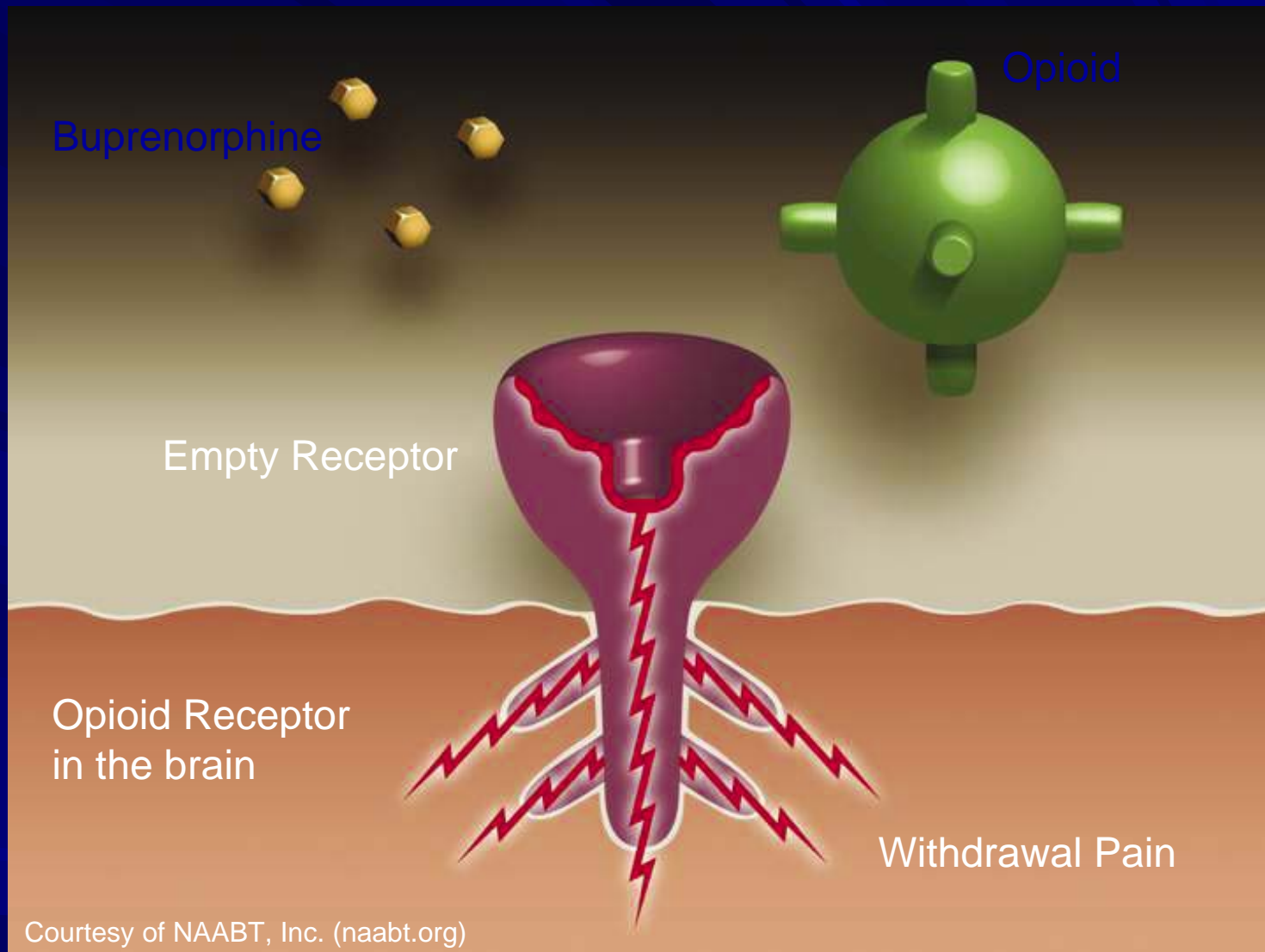
Naltrexone

Naloxone

■ Partial Agonists

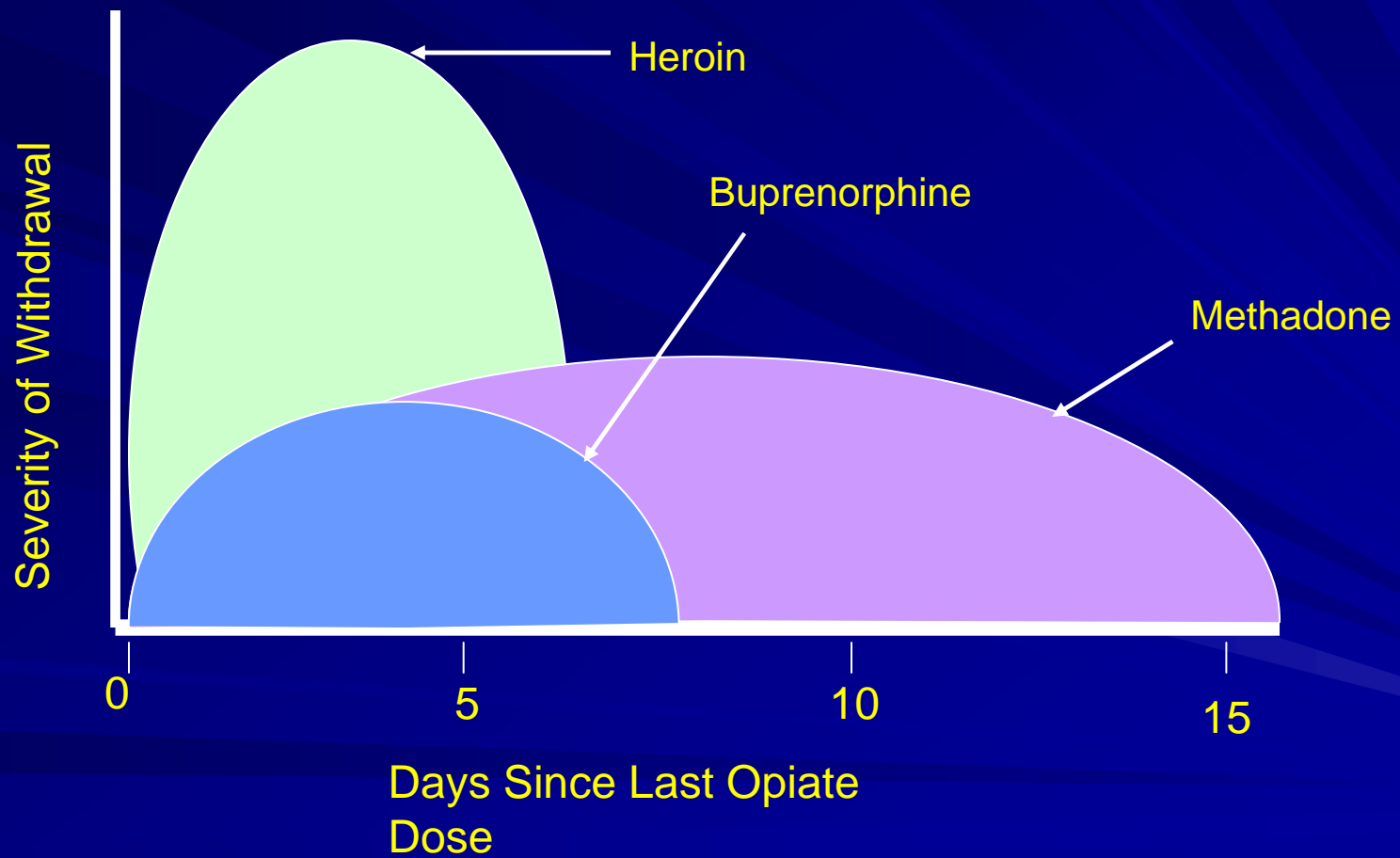
- Compounds that *partially* activate the receptors and block further activation
 - Compounds have a ceiling effect and have reduced abuse potential because once maximum effect is reached – no further activation is possible

Buprenorphine

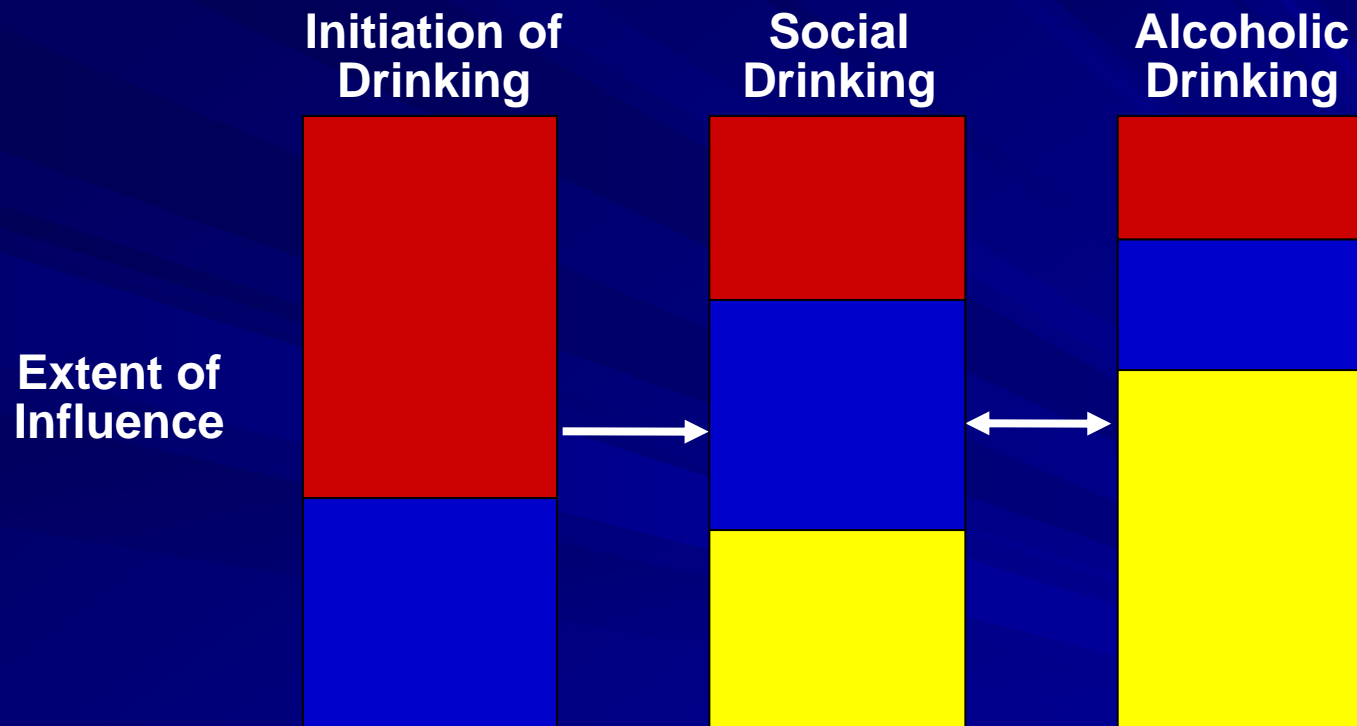


Opioid receptor unsatisfied -- Withdrawal. As someone becomes “tolerant” to opioids their opioid receptors become less sensitive. More opioids are then required to produce the same effect. Once “physically dependent” the body can no longer manufacture enough natural opioids to keep up with this increased demand. Whenever there is an insufficient amount of opioid receptors activated, the body feels pain. This is withdrawal.

Opioid Withdrawal Severity



Initiation and Continuation of Drinking



- Environmental (familial and non familial)
- Personality/Temperament
- Pharmacological effects of ethanol

NIAAA Guidelines

- Men-less than 4 drinks daily/14 per week total
- Women-less than 3 drinks daily/ 7 per week

DRINKING PATTERNS

- Never exceed the daily or weekly limits-1 in 100
- Exceed only the daily limit-1 in 5
- Exceed both daily and weekly limits -1 in 2

RISK AND PROTECTIVE FACTORS

<i>Risk Factors</i>	<i>Domain</i>	<i>Protective Factors</i>
Sensation-seeker	Individual	Successful student
Child of drug user		Bonds with family
No supervision	Family	Consistent discipline
Parent/sibling drug use		Anti-drug family rules
Pro-drug use norm	School	Anti-drug use norm
Availability of drugs		High academics
Crime/poverty	Community	Consistent anti-drug message
No afterschool programs		Strong law enforcement

RESILIENCY

- SOCIAL COMPETENCE
- PROBLEM SOLVING SKILLS
- AUTONOMY
- SENSE OF PURPOSE

CRAFFT

- Car
- Relax
- Alone
- Family or Friends
- Forgot
- Trouble

- The family is the primary level of community. It must be a united front with the other adults in the community – school, law enforcement, social service agencies
- We're all in this together

H=W

S D

ENJOY YOUR
MATE MORE
THAN YOUR
CHILDREN

■ The greatest gift a father can give to his children is to love their mother and the greatest gift a mother can give to her children is to love their father.

- This is where kids learn intimacy and dignity and respect

- All your statements with your teens should start with “I know I can’t stop you from.....at this party – however, if you do this, this will happen”
- Consequences must be reasonable and enforceable

Meet your kids
where they are at

IF YOU MEET YOUR KIDS
WHERE THEY ARE YOU
WILL ALWAYS WALK
AWAY WITH EMPATHY
AND UNDERSTANDING

ALWAYS ASSESS

■ ABILITY

■ WILLINGNESS

THE TWO JOBS OF CHILDREN

■ RECEIVE LOVE

■ LEARN

■ INDIVIDUATION

■ SEPARATION

■ AUTONOMY

■ COOPERATION

TRUST
VS
FAITH

- EVERYONE MAKES THE BEST DECISIONS AVAILABLE TO THEM AT THE TIME WITH THE CHOICES AVAILABLE TO THEM.

CONTROL

VS

INFLUENCE

■ EVERY TIME YOU
ENGAGE IN A CONFLICT
WITH YOUR CHILD
YOUR CHILD MISSES AN
OPPORTUNITY

Higher levels of family conflict were associated with high levels of peer antisocial activity.

—*NIDA 2002*

Anxiety of parents will
influence the anxiety
of your teens.

—*John Gottman*

Greatest problem is that
parents were afraid of
stating their beliefs and
feelings.

NIH/Risky Adolescent Behavior Study

Cut the roof off in your home and look at what is going on.

Create a subculture
around your child
which will protect
your child from the
pop culture.

- Reasonable parenting –
 - based on who your child is not who you think they should be
 - show them how much you care before you show them how much you know

- Listen
- Understand
- Take serious
- Affirm

Do what the
relationship allows
for the moment

■ THE MORE YOU SHOW YOUR
HUMANESS, THE MORE YOU
ARE LOVABLE

■ DEPERSONALIZE

■ BE NICE AND
FORGIVE

(STAY THE ADULT)

What was the last
good conversation you
had with your child?

What were you doing?

Externalize
and
Depersonalize
the problem

Your child is
not the problem

The problem
is the problem

Mental Health

- Lovable
- Capable
- Connected

RECOVERY

Re “cover” the lost parts of self

1. Physical (Detox)
2. Emotional/Psychological
(Rehabilitation or habilitation)
3. Spiritual Recovery

■ Most kids respond to incentives – Win/Win – earned rewards

(Positive reinforcement)

- Some kids respond to negative consequence
(if they perceive the consequences as fair)

■ Have your kids participate in their consequences

-Empowers your child

-Reduces possible power struggle

-Increases stake in the outcome

Contingency management reduces drug use

■ Opioids

(Bickel et al., 1997; Preston et al., 1998)

■ Cocaine

(Higgins et al., 1991, 1993, 1994; Silverman et al., 1996)

■ Benzodiazepines

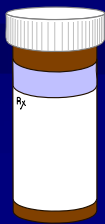
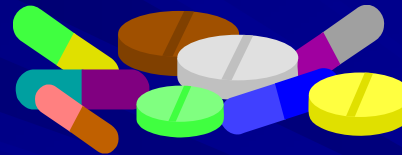
(Stitzer et al., 1992)

■ Marijuana

(Budney et al., 1991, Budney et al., 2000)

■ Nicotine

(Stitzer & Bigelow, 1984; Roll et al., 1996)



■ WHAT IS THE
BEHAVIOR YOU
MODEL FOR YOUR
KIDS?

■ Tailor intervention based on your relationship with your child and your child's relationship with drugs

■ STRIKE WHILE THE
IRON IS COLD!

Philosophy of care

■ TREAT YOUR
KIDS WITH
DIGNITY AND
RESPECT

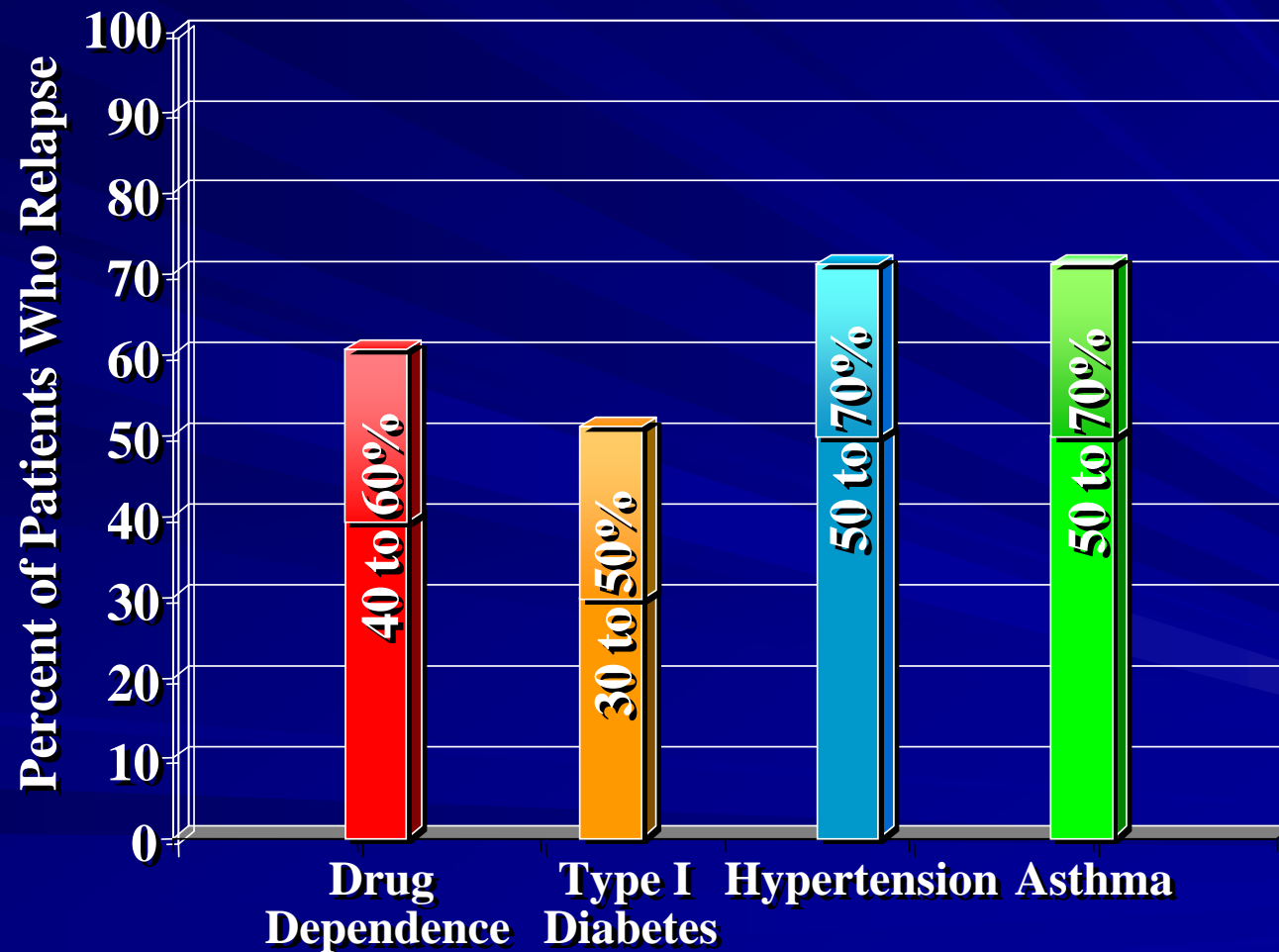
Dysfunctional Family

- There is no such thing as a dysfunctional family. All behavior is adaptive and has a function.

Enabling

- Everyone shows love the best they know how.
- **EVERYONE MAKES THE BEST DECISIONS AVAILABLE TO THEM AT THE TIME WITH THE CHOICES AVAILABLE TO THEM.**

Relapse Rates Are Similar for Drug Dependence and Other Chronic Illnesses



Source: McLellan, A.T. et al., JAMA, Vol 284(13), October 4, 2000.

WHAT WORKS

- Motivational Enhancement Therapy (MET)
- Motivational Incentives (Contingency Management)
- Matrix Model (Stimulants)
- Seeking Safety Model (Women and Trauma)
- Relapse Prevention (Marlatt)
- Cognitive Behavioral Therapy

Evidence Based Adolescent Treatment

- BSFT-Brief Strategic Family Therapy (Szapocznick)
- MST-Multisystemic Therapy (Henggeler)
- MDFT-Multidimensional Family Therapy (Little)

What Does Not Work

- Confrontation -confrontation is only effective if it is perceived as concern . It assumes a therapeutic relationship.

(The goal of the first session is to have a second session)

- Substance abuse education alone
- Group therapy and residential treatment with some adolescent populations

Stages Of Change

- Pre-Contemplation (Denial)
 - ✎ (“I’m Only Here Because ...”)
- Contemplation (Ambivalence)
 - ✎ (“I’m Not Sure What To Do”)
- Preparation (Early Recovery)
 - ✎ (“I’ve Cut Back A Little Already”)
- Action (Treatment Ready)
 - ✎ (“I’ll Do What It Takes”)
- Maintenance (Relapse Prevention)
 - ✎ (“This Isn’t As Easy As I Thought”)

Match Tx To “Stages Of Change”

- Where is your child at?
- Where are you at?
- Where is the rest of the family at?

ALWAYS OFFER:

- HOPE

- FAITH

■ WHO BELIEVED IN
YOU?
(HOW DID YOU KNOW?)

WHAT DO YOU NEED
TO DO TO BE THAT
PERSON IN YOUR
CHILD'S LIFE?

■ What messages do you give your kids that you believe in them, have faith in them?

ASK YOUR KIDS

- How am I doing as your parent?
- What am I doing well?
- What could I do better?
- What are the messages I give you that tell you I believe in you?

More Questions

- Do you feel you can tell me anything?
(and if not what am I doing that is getting in the way)
- Do you feel I am honest with you?
- Do you feel you know me?

More Questions

- Is there anything you want to know about me (such as what I was like in high school?)
- Does what I do now (or what I did in high school) influence your decisions today?

- Always offer hope and faith and be willing to do whatever it takes to improve your relationship with your child

Suggested Readings

- www.thebrain.mcgill.ca/flash/index_d.html#
Dubuc, B. (2004). *The brain from top to bottom*
- www.drugabuse.gov/Published_Articles/
Leshner A. (2000). *Oops. How casual drug use leads to addiction*. National Institute on Drug Abuse, September, 2000.
- ***Why do they act that way? : A survival guide to the adolescent brain for you and your teen***
Walsh, D. (2004). NY: Simon & Schuster.
- ***What makes teens tick?***
Wallis, C. (May 10, 2004). NY: Time magazine.
- ***The adolescent brain and college drinker: Biological basis of propensity to use and misuse alcohol.***
Spear, L. (2002). *Journal of Studies on Alcohol*, 14, pp. 71-81.

Resources

Join Together. (2006). 1 in 5 teens misuse prescription drugs. Last accessed on July 29, 2007 at:
<http://www.jointogether.org/news/research/summaries/2006/1-in-5-teens-misuse.html>

McCabe, S.E., Teter, C.J., & Boyd, C.J. (2004). The use, misuse, and diversion of prescription stimulants among middle and high school students. *Substance Abuse & Misuse*, 93, 7, 1095-1116.

National Institute on Drug Abuse [NIDA]. (2001). NIDA Scientific Panel Reports on Prescription Drug Misuse and Abuse. *NIDA Notes*, 16, 3.

WEBSITES

- www.drugabuse.gov (NIDA)
- www.samhsa.gov (Substance Abuse and Mental Health Administration)
- www.salis.org (Substance Abuse Librarians and Information Specialists)
- www.promisingpractices.net (Promising Practices Network on Children, Families and Communities)
- www.JoinTogether.org (Join Together)