

# CURRENT TRENDS IN SUBSTANCE ABUSE

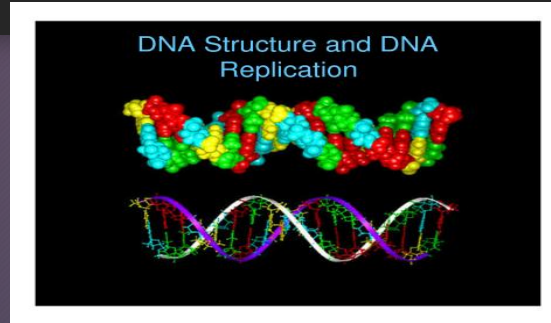
Michael Nerney and Associates  
PO Box 93  
Long Lake, NY 12847-0093  
518-624-5351  
michaelfnerney@gmail.com

# A Disease of the Brain

- ASAM
- Primary chronic disease of the brain reward, motivation, memory, and related circuitry.
- Clarify and de-stigmatize
- Public Perception
- Percentage change 38% to 47% but no change in stigma

# Who is at risk?

- Genetics



- Environment



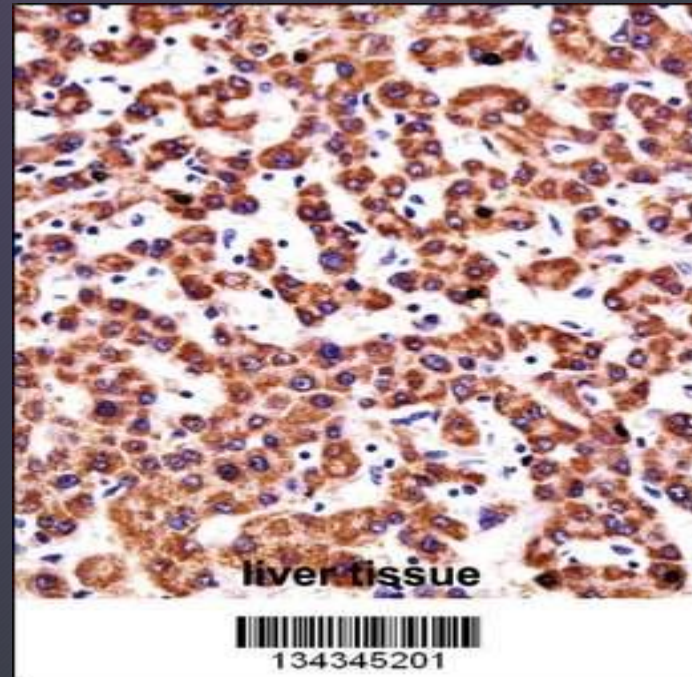
- Experiences





# P450 CYP2D6

- Codeine converted to Morphine
- Metabolic function
- Poor
- Effective
- Moderate
- Ultra fast



# ACE Study

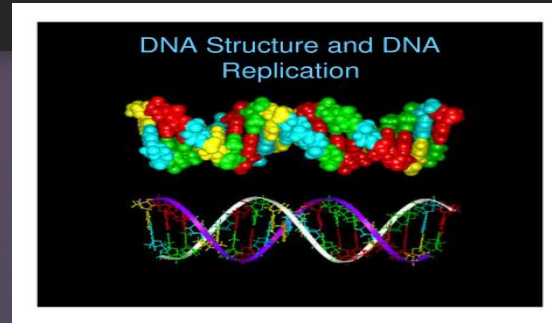
• Household dysfunction	Totals
• Caretaker abused	12.7
• Substance Abuse	26.9
• Mental Illness	19.4
• Divorce/Separation	23.3
• Incarceration	4.7





# Who is at risk?

- Genetics



- Environment



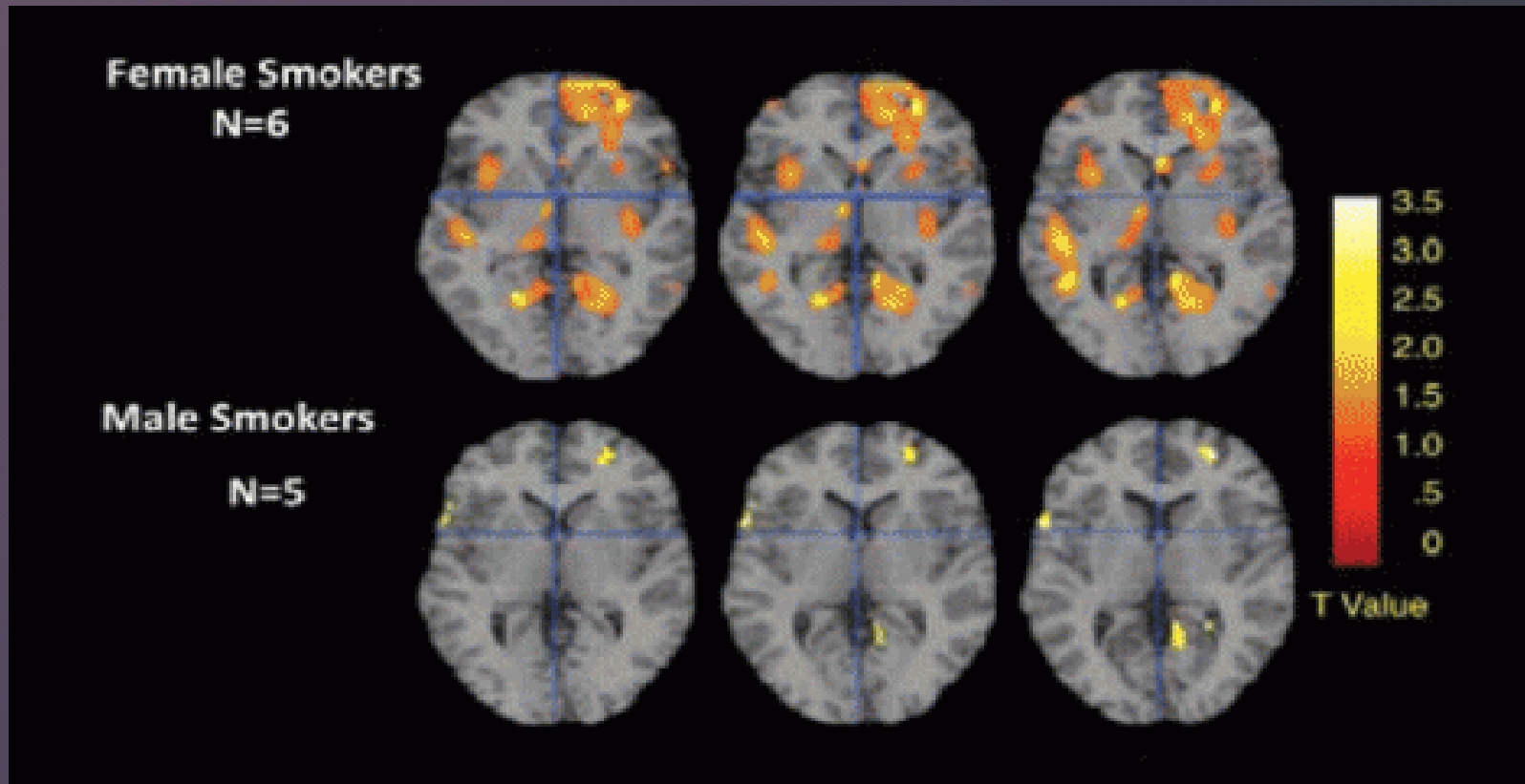
- Exposure



# VAPE/JUUL Products



# Gender Differences

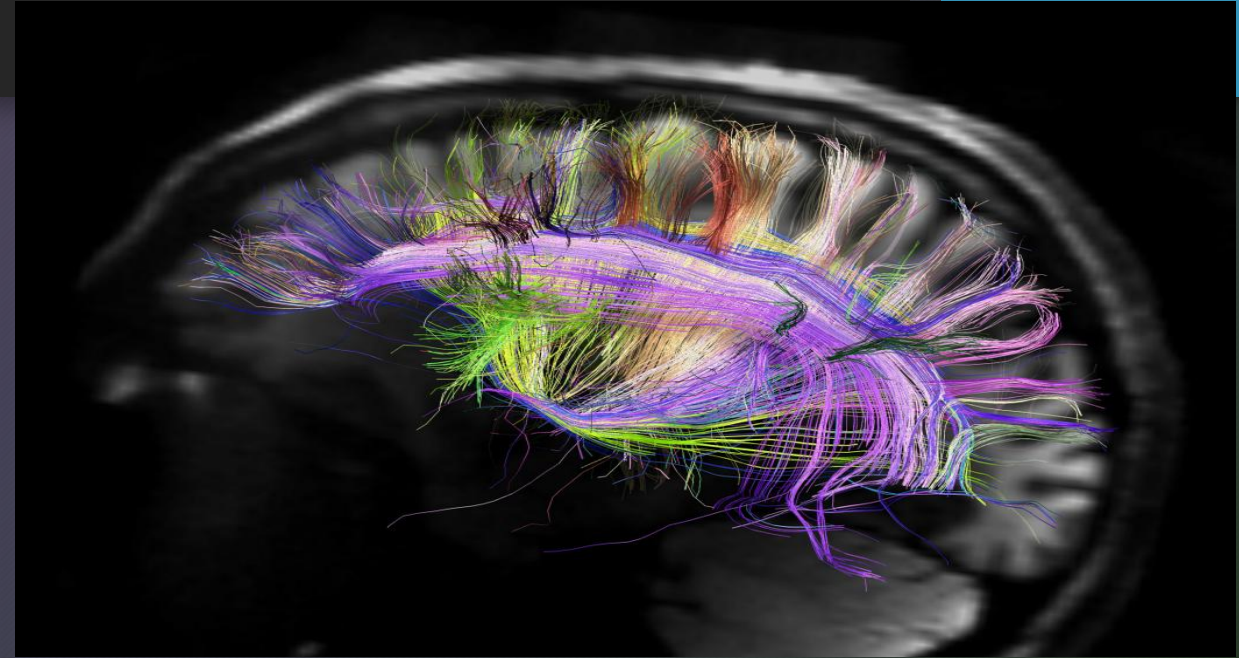




# The Adolescent Brain Factor

- Emotional Intensity

- Ages 10 – 24 years
- Amygdala
  - Hormones
  - Larger and more active
- 2 to 4 times

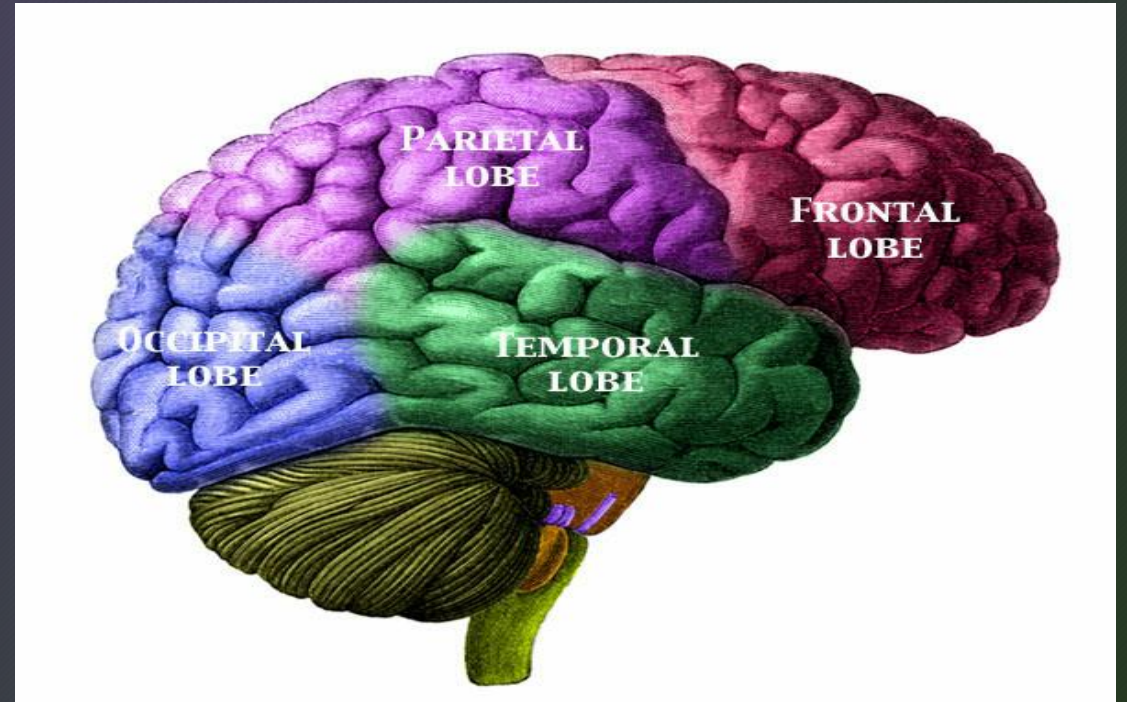


<https://images.nonexiste.net/popular/2012/03/30/diffusion-spectrum-imaging-reveals-an-orderly-weave-of-nerve-fibers-in-the-brain/>

# The Adolescent Brain Factor

- Risk Taking and Peers (Who is addressing this?)

- Change at 12- 13 years old
- New sites appear in brain
- Emotional reward for risk taking
- Peer influence





# Stress in America-APA Survey

- 13-23
  - Highest stress First time ever

27% Extreme stress 8-10

55% Moderate stress 5-7

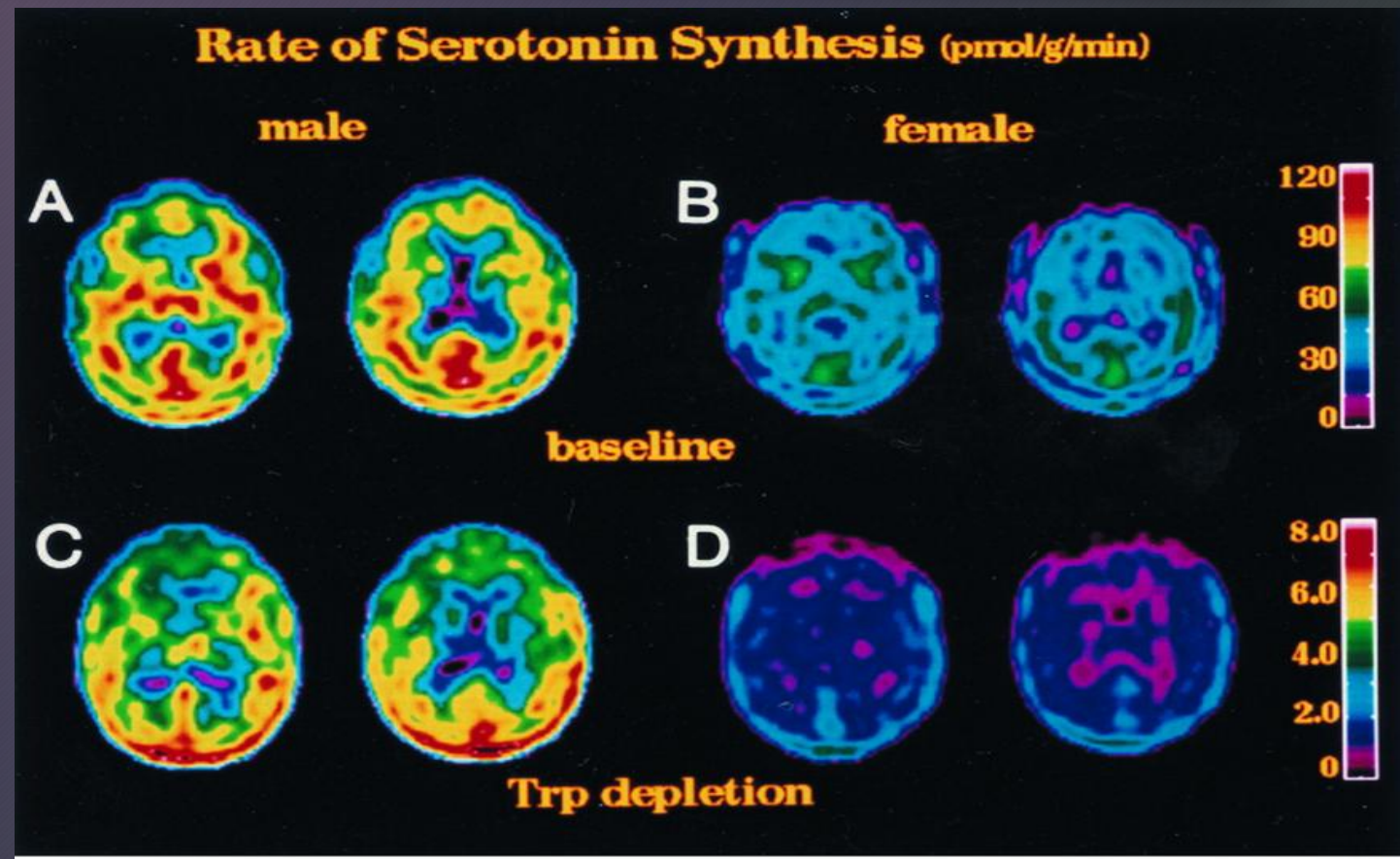
(Stress reduction, Key need)





# High Risk for Drug and Alcohol Abuse/Addiction

- Depression
- Serotonin Synthesis



# Motivation for Drug Use

- Seek drugs for:
  - Create positive effect in brain chemistry
    - Dopamine release in reward sites
  - Suppress negative emotions
    - Activation in specific sites





# Drug Combinations

- Enhance Primary Drug Effect
  - Boost the initial drug
  - Slow metabolism
  - Grapefruit juice





# Brain Facts

- Risk Taking
  - New Sites of Activity
  - Influence of Peers
  - Male/Female
- Emotional Reward



# Cultural and Environmental Influences

- Role Models



- TV



- Social Media












































# Risk Taking



## THE CHOKING GAME

AND SOME OF THE LIVES IT'S TAKEN

 Josh Huntington - 18 Falls Falls, Idaho May 7, 1989 - Nov 14, 2007	 Leo McPhee - 16 Santa John N.B., Canada Sept 26, 1989 - March 21, 2006	 Eric Matthew Greenup - 15 Alice, Texas April 1, 1990 - Dec 11, 2005	 Sean Sanders - 16 Lake in the Hills, Illinois Sept 21, 1990 - Feb 15, 2003	 Utah Thomas Gikland Martin - 12 Auburn, Michigan April 16, 1990 - Nov 14, 2008	 Erik Robinson - 12 Santa Monica, California Jan 27, 1998 - April 21, 2010	 Cody Ryan - 14 Lansing, Michigan July 3, 1993 - Mar 13, 2008	 Tyler Mison - 13 Ipswich, United Kingdom Feb 5, 1996 - Sept 6, 2009	 Laurian Joy Blaske - 13 Boulder, South Carolina Feb 23, 1997 - July 4, 2010	 Brianna Reid Canacart - 12 Germantown, Colorado Oct 3, 1997 - June 19, 2010	 Skyler W. Smith - 12 Troy, Idaho April 4, 1999 - May 30, 2011	 Braden Erickson - 13 Tulsa, Arizona Feb 19, 1992 - May 30, 2005	 Austin H. Rasmussen - 10 Chemek, Idaho Feb 29, 2002 - March 31, 2012	 Kristian Tyler Marceno - 15 Cape, North Carolina May 20, 1993 - Nov 2, 2008
 Jacob - 15 St. Louis, Missouri Feb 26, 2010	 Cayden Scott Wines - 12 Newark, Ohio Dec 12, 1994 - Jan 31, 2007	 Marika Lynn Bodalla West - 15 Ann Arbor, Michigan Dec 30, 1993 - July 16, 2009	 Alex Quinby - 13 Yonkers, New York Jan 26, 1991 - Nov 16, 2009	 Dallas Ted Stout Duvall - 13 Farmington, New Mexico Jan 22, 1995 - Oct 26, 2008	 Jay Smith - 17 Anoka, Tennessee Sept 3, 1991 - Aug 3, 2009	 Justin Paul Butler - 16 Auburn, California Jan 26, 1991 - Nov 16, 2009	 Joshua Leo Engle - 13 Burlington, Iowa Aug 8, 1998 - Nov 21, 2011	 Nicholas Ryan Dossdilly - 16 Patterson, Ohio Aug 10, 1994 - Oct 17, 2010	 Thomas Exum Hyder - 12 Johnson City, Tennessee Aug 30, 1994 - March 10, 1997	 Kelly Cathyle LaRocque - 18 Hillsboro, Oregon Nov 28, 1997 - Jan 7, 2010	 Gavin Andrew Wink - 12 Schwaben, Wisconsin Oct 25, 1999 - Sept 15, 2012	 Zachary Michael Hughes - 15 Elmwood City, Illinois Dec 17, 1991 - Aug 5, 2007	 Zakry Jon Bridges - 14 Madison, Kentucky June 26, 1997 - Sept 5, 2011
 Xavier John Dano - 13 California June 8, 1993 - May 21, 2006	 Jack Martin Doyle - 13 Winnetka, Wisconsin Nov 8, 1992 - Oct 25, 2006	 Alex Beth Somers - 14 Macon, Georgia Oct 24, 1993 - Oct 5, 2008	 Billy Jay Crow - 11 Relle, Ohio Dec 28, 1998 - Dec 23, 2010	 Brody Everett Hageman - 14 Bloomington, Illinois Dec 14, 1997 - April 4, 2012	 David G Wright - 13 Lawrenceville, Georgia April 18, 1997 - Oct 30, 2010	 Drew Paul Allen Fiala - 11 David City, Nebraska March 17, 1998 - March 12, 2010	 Plamen Toni - 13 Geneva, Switzerland May 26, 2009	 Gage Andrew Wink - 12 Schwaben, Wisconsin Oct 25, 1999 - Sept 15, 2012	 Zachary Michael Hughes - 15 Elmwood City, Illinois Dec 17, 1991 - Aug 5, 2007	 Zakry Jon Bridges - 14 Madison, Kentucky June 26, 1997 - Sept 5, 2011			



# Risky Business



# Household Products

- Solvents
  - Brain Damage
  - Sudden Fatal Event





# Medicine Cabinet

- Rx and OTC
  - Parents and Grandparents
  - Siblings





# Alcohol: new products

- Alcohol treats



- Pocket Shots



**SnöBar**  
frozen cocktails

**14.6% Alcohol**  
**100% Cool**

**GIMME SOME!**  
SNOBARCOCKTAILS.COM

21 and over only  
enjoy responsibly

# Impulse Control

- PRDM2
- Down regulated
- Disrupts impulse control
- Big factor in trying new drugs





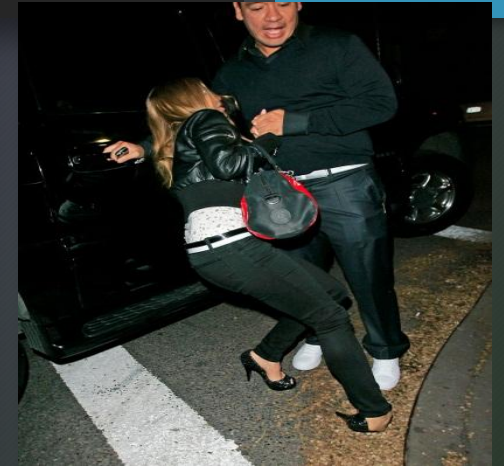
# Alcohol and drug combinations

- Robo-shots/Mucys
  - Dextromethorphan
  - Opioid cough suppressant
  - Plus alcohol
  - Rapid and powerful intoxication
  - Motor control
  - Impulse control
  - Delusional



# Alcohol and caffeine: Risk factors

- Physical
  - Energized
  - Uncoordinated
  - 30% drop in glucose uptake in motor cortex
  - 30% drop in glucose uptake in visual cortex
  - Slower reaction time





# Alcohol and caffeine: Risk factors

- **Behavioral**
  - Sense of competence
  - Aggressive social interactions
  - Twice as likely to suffer physical injury
  - Twice as likely to get in fights
  - Twice as likely to be either a victim or a perpetrator of sexual assault

# Alcohol and Marijuana

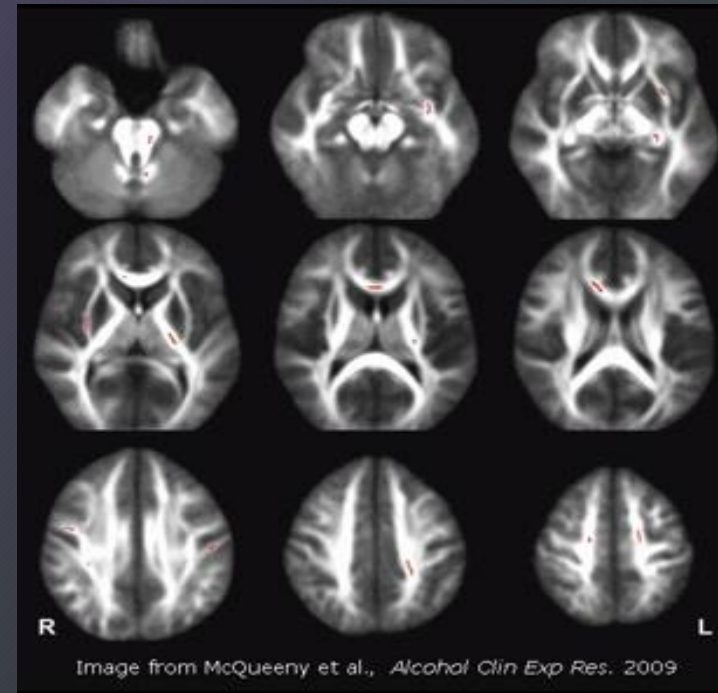
- Popular combination
- Cross fade
- Which one first
- Toxic effect





# Alcohol: impact on brain

- NMDA pathways
  - 48 hours – calcium overrun
  - Cell death
- One year of binge drinking
  - 10% loss of PFC volume
  - Logic, reason, executive function



# Alcohol: impact on brain

- One year of binge drinking
  - 10% loss of hippocampus volume
    - Memory
  - Motivation
  - Social behaviors
    - Learn how to study
    - Appropriate social interaction
    - Ask for help

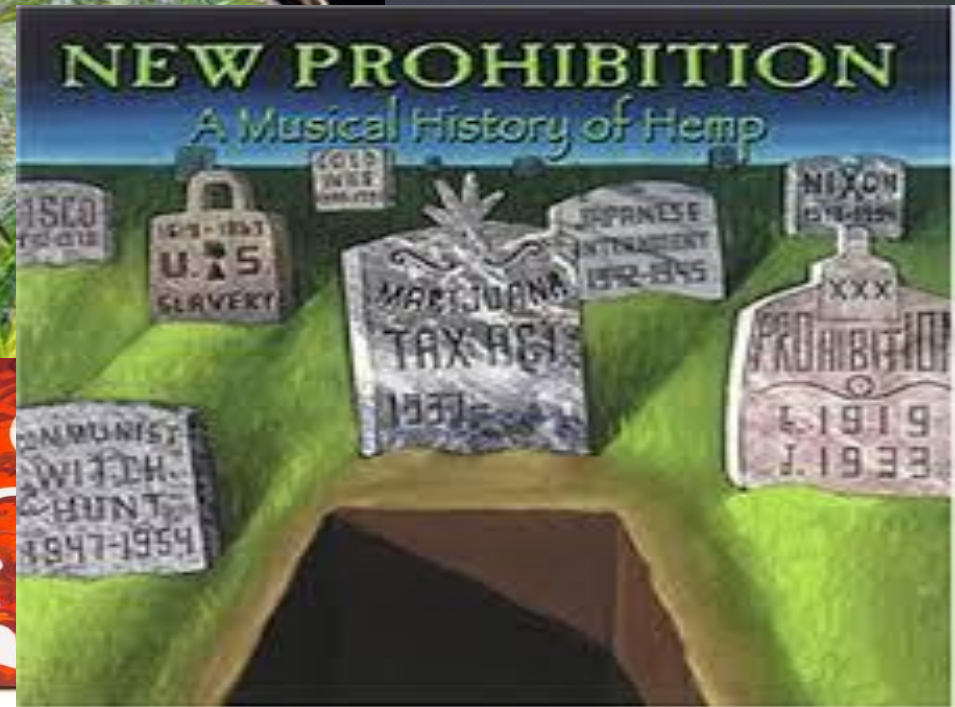
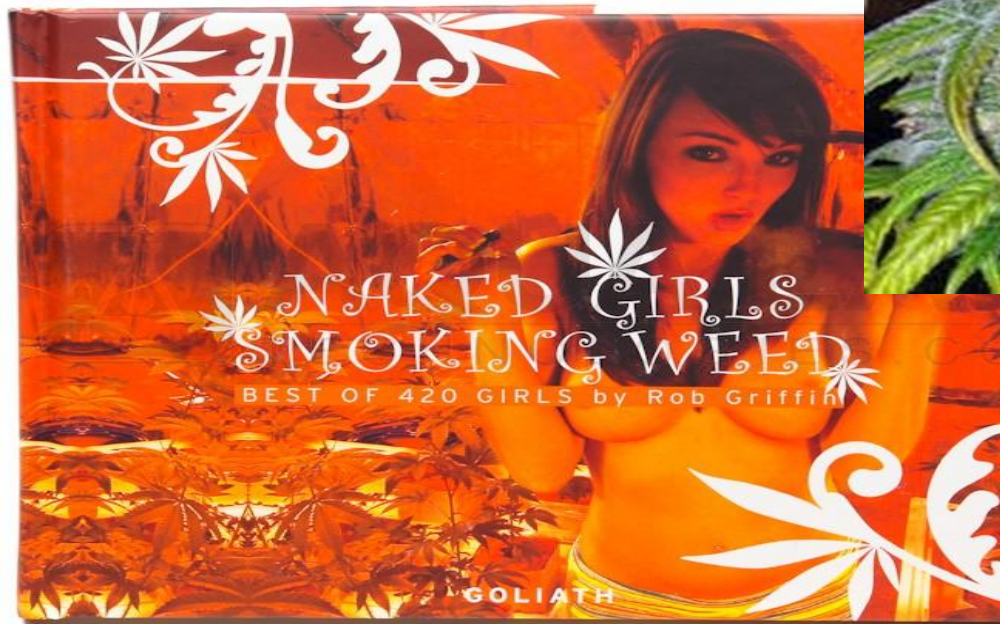




# Marijuana marketing: it's good for you



# Marijuana marketing: sex, buds, and rock and roll





# New Products: Dabbing

- Butane Hash Oil
- Amber, Shatter, Ear Wax



# New products

- Cloud 9
- AB-PINACA + Others
- Synthetic Cannabinoids
  - High Potency
  - Dabbing
  - E-pens
  - Beverages
- Extractions always increase risk for bad outcomes!
  - Addiction, Overdose, Accidental Death





# New products

- Marijuana edibles



# Edibles Risk Factors

- Packaging
  - Resembles other treats
- Dose
  - Range of several hundred milligrams
- ROA
  - Slow start
- Access
  - Children find them



# Marijuana, Marijuana Synthetics: Effects

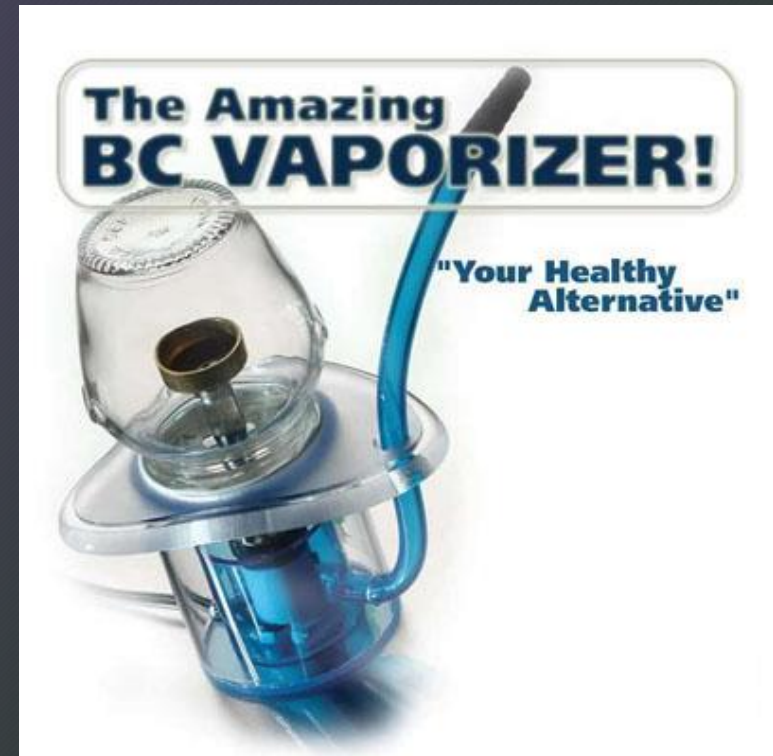
- Behavioral
  - Increased appetite
  - Divided attention difficulties
  - Cognitive deficiencies
  - In vulnerable individuals:
    - May lead to psychosis
    - May deepen depression

# Marijuana: Significant risks

- Addiction
  - Anandamide influence
  - High potency – more activity in CB1 and CB2 sites
  - May lead to dependency and addiction
  - Tolerance
  - Withdrawal
  - Compulsion
  - Loss of Control
  - Continued Use Despite Consequences



# Vaporizing



# Liquid nicotine



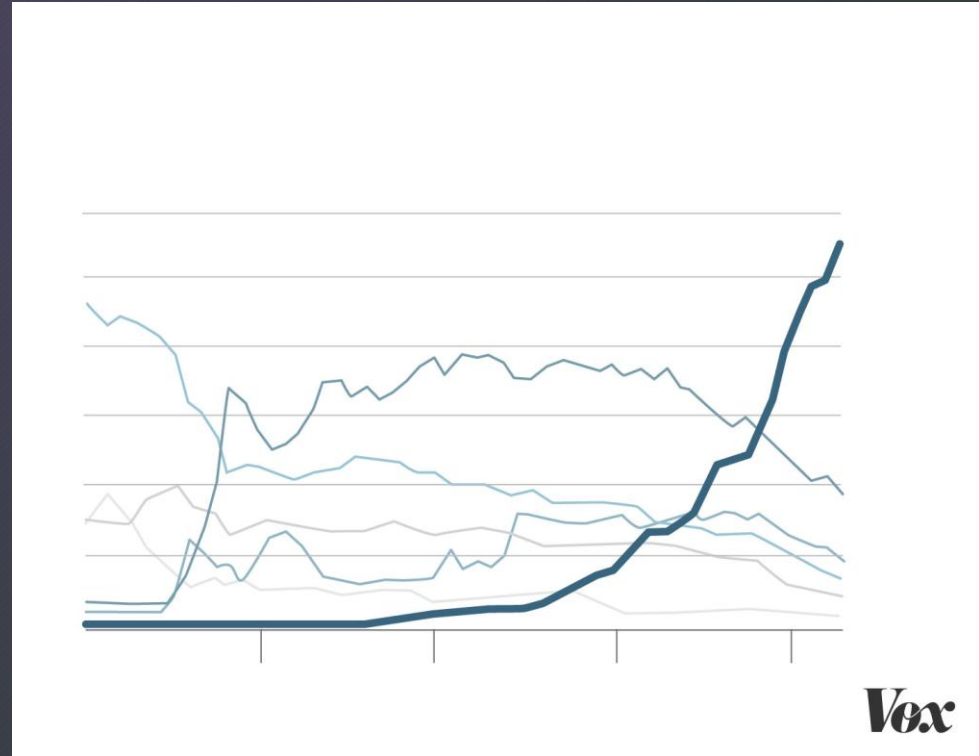
## E-LIQUID NICOTINE STRENGTH GUIDE

Regular Cigarette	E-liquid Nicotine
Unfiltered, very strong	Super High - 36mg
Full Flavored, Strong	Extra High - 24mg
Regular (most)	High - 16mg
Light	Med - 11mg
Ultra-light	Low - 8mg
Freedom from Nicotine!	No Nicotine - 0mg

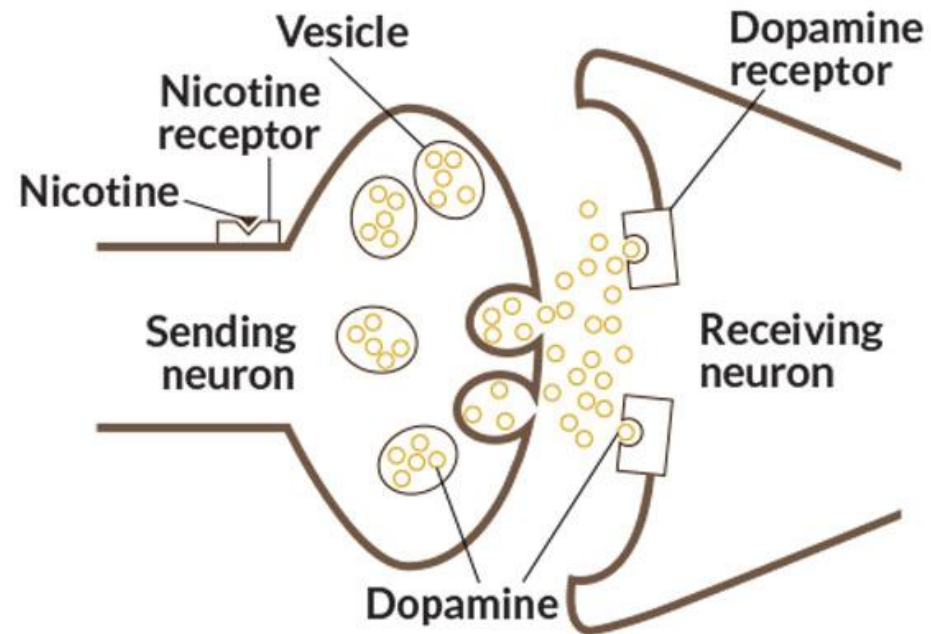




# #doitforjuul



# Nicotine and the Brain





# Nicotine and the Brain

- Age of onset
- Addiction and Relapse
- Kindling
- Later Vulnerability



# Heroin: Pharmacology

- Source





# Heroin

- Pain Medication



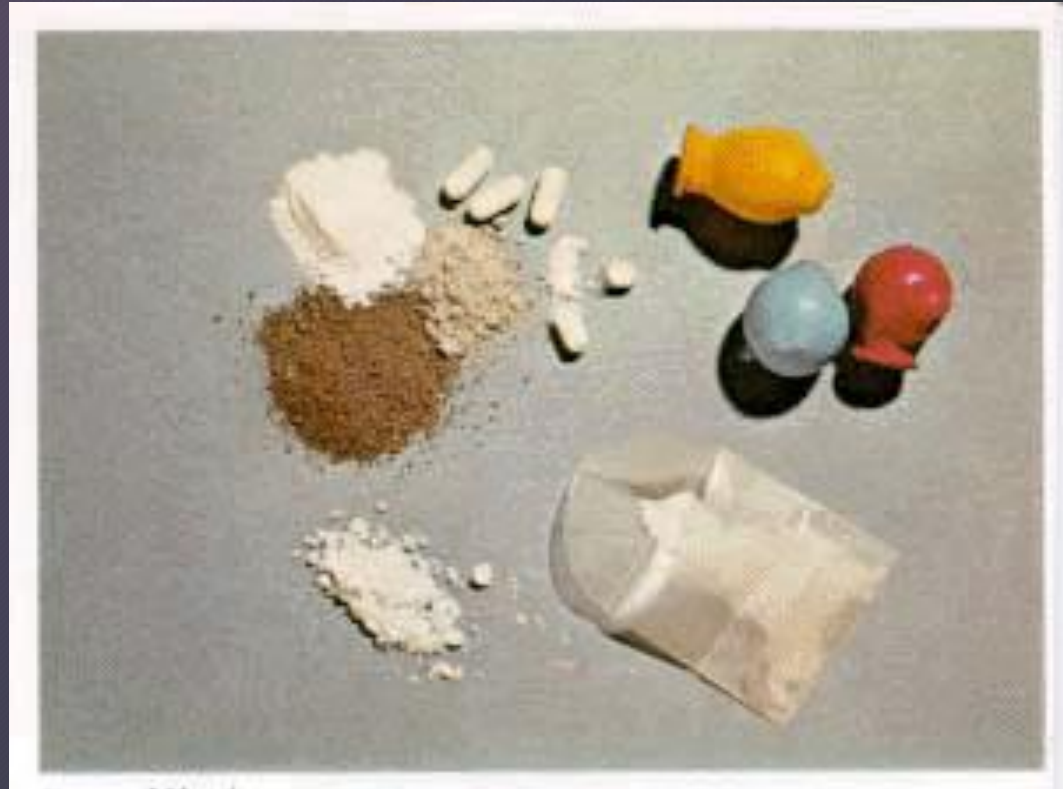
- Street Drug



- Routes of Administration

# On the Street

- Price
- As low as \$12





# Acetyl fentanyl/carfentanyl

- Black Dahlia, Phantom
- PINK U-47700
- W-18 Gray Death



# Route of Administration

- Routes of Administration

- Snorting



- Smoking



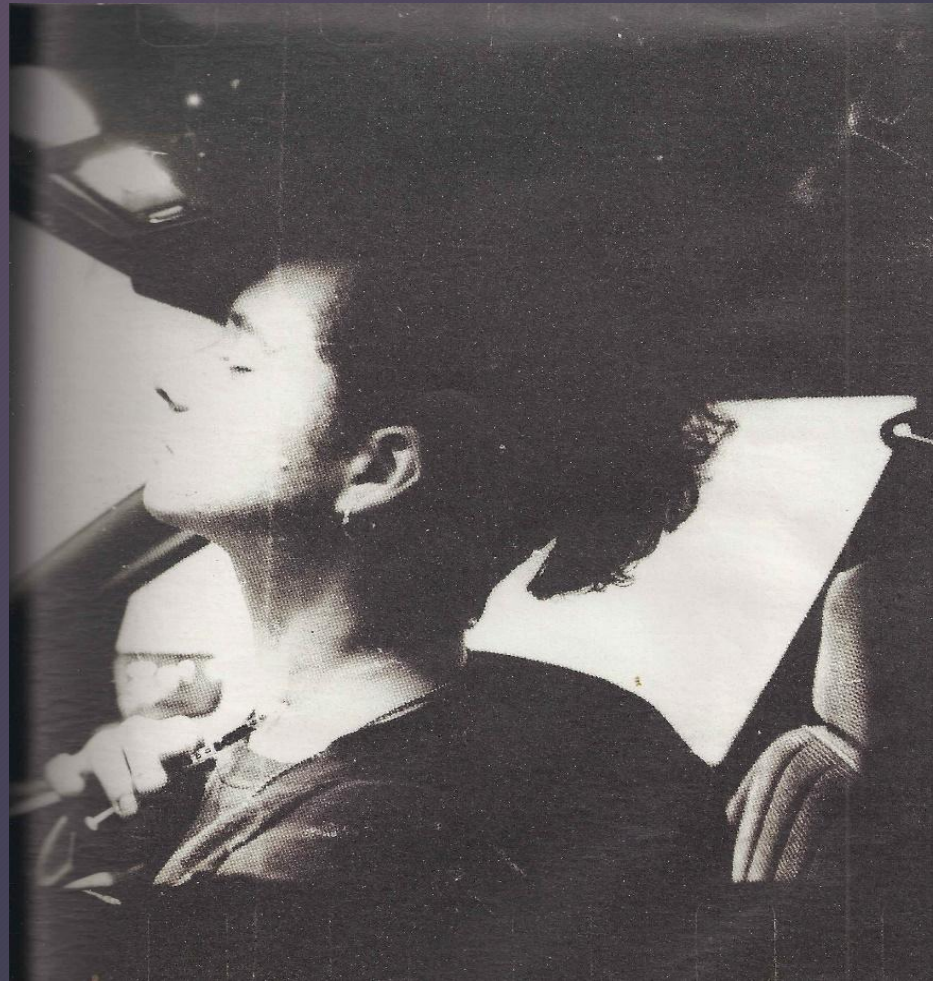
- Injecting



- IV, SC, IM



# Route of Administration



# Risk Factors

- Addiction



- Infection



- Overdose





# Heroin and Other Drugs

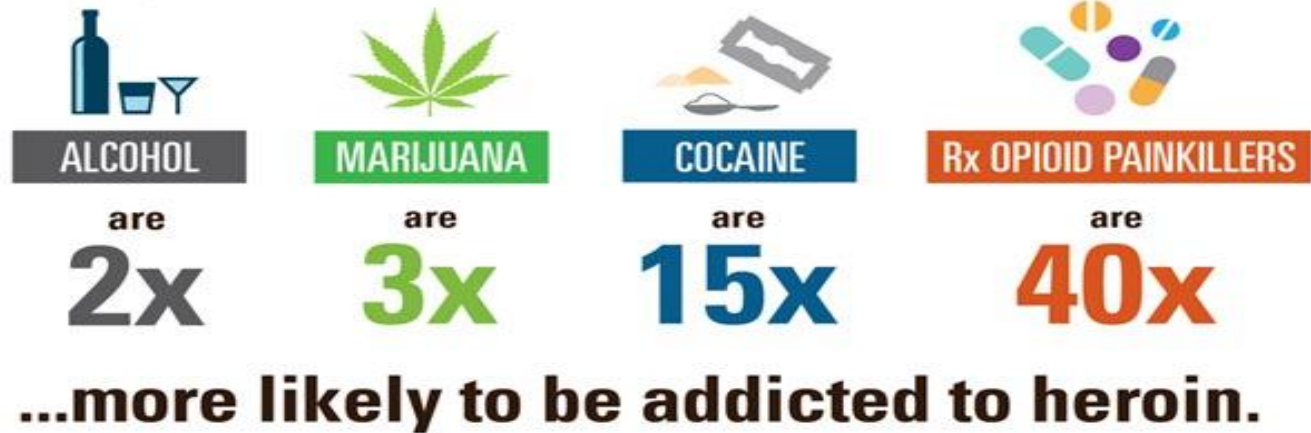
**Heroin use is part of a larger substance abuse problem.**

**Nearly all people who used heroin also used at least 1 other drug.**

**Most used at least 3 other drugs.**

**Heroin** is a highly addictive opioid drug with a high risk of overdose and **death** for users.

**People who are addicted to...**



SOURCE: National Survey on Drug Use and Health (NSDUH), 2011-2013.

# On the Horizon

- Other Opioids

Zohydro Rx pain

Codeine Rx pain and cough

Imodium OTC

Gabapentin and Lyrica  
nerve pathway



# New Record for Overdose Fatalities

- Drug overdose deaths reach all time high 2016
  - All drugs 64,404
  - Rx Opioids 14,400
  - Heroin 15,400
  - Fentanyl + 20,100



# By the Numbers

Drug Overdose fatalities in the US

152 per day    64,000 per year    Estimated to exceed 70,000 in 2018

Alcohol fatalities in the US.

241 per day    88,000 per year

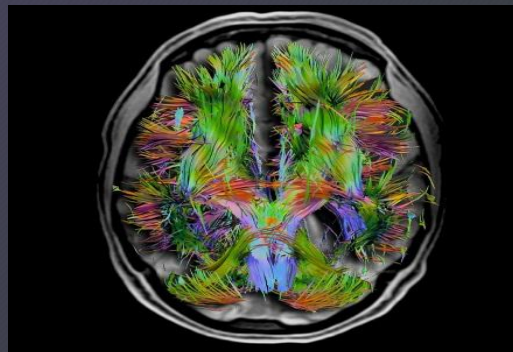


# Concerns

- New Research on the Brain

- Embedded Memory
  - Too much DA
  - DeltaFosB

- Chemical Changes
  - Protein shift
  - PKMzeta
  - Stores the high



# Concerns

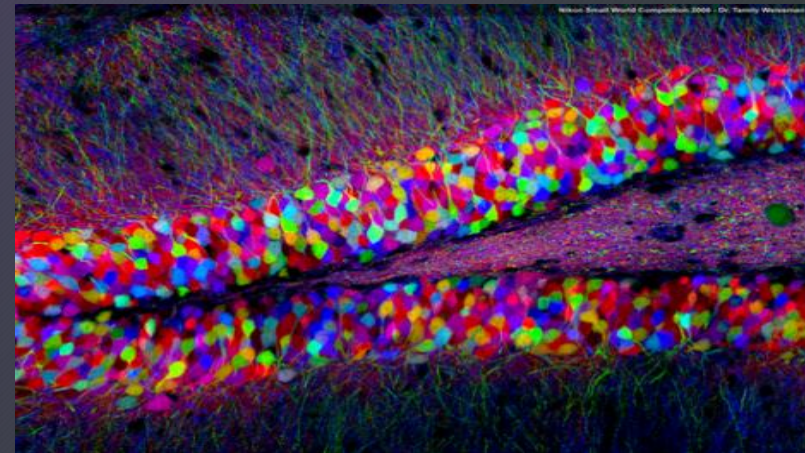
- BRAIN CHANGES:
- Reward System Shutdown
  - Too much DA
  - CREB
  - Gene code
  - Synthesize Dynorphin





# Addictive Process

- Tolerance
  - Liver
- Brain
  - Receptor sites



# Addictive Process

- Compulsion





# Addictive Process

- Loss of Control
  - How much
  - How often
  - How long



# Addictive Process

- Withdrawal
  - Physical
  - Psychological





# Addictive Process

- Continued abuse in spite of consequence



# Education

- Public/Private Schools

NY State Good Samaritan

- Parents

- Workplace

- Hospitals

- Drug seeking



She gets her hair from her mom.  
Her eyes from her dad.  
And her drugs from her grandma's  
medicine cabinet.

**BE AWARE. DON'T SHARE.**  
For more information, go to [www.lockyourmeds.org](http://www.lockyourmeds.org).

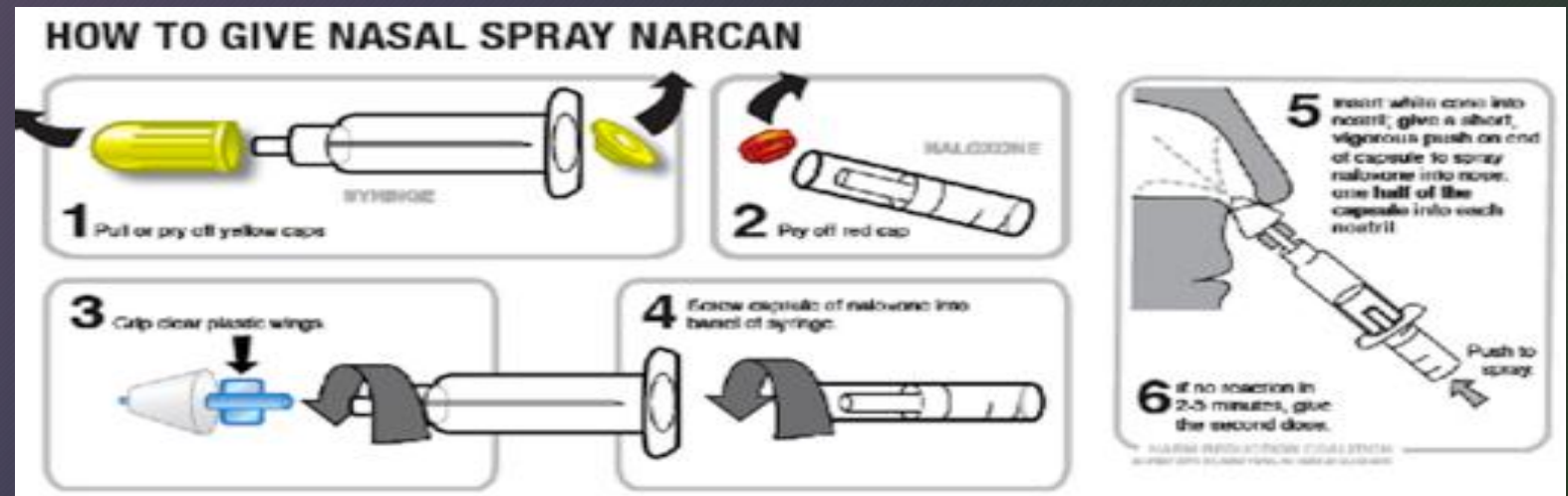
  

For more information about the Lock Your Meds™ Campaign  
or Informed Families/The Florida Family Partnership, please  
call: (305) 856-4886, or visit us at [www.informedfamilies.org](http://www.informedfamilies.org).



# Prevention

- Public Health Model
- Gordon's Categories
  - Universal
  - Selective
  - Indicated



# Community Response

- Diverse strategies for pain management
- Addicted moms programs
- Parent, Grandparent, and student education





# Community Response

- Support for Treatment system
- Cooperation with Social Services
- New elements of Law Enforcement

# Current and Experimental Medications as Treatment Adjuncts

- For Opioid Dependency:

Trexan

Buphenex

Suboxone

Vivitrol

Probuphine





# Medical Assisted Treatment

- Upside

Reduction of fatalities from all causes-- 50%

- Downside

Mix with alcohol

Street sales

# Brain disease

- Just the Facts (Community Awareness)
  - Relapse ranges from 50%-90%
- Multiple factors
  - Definition
  - Drug of Addiction
  - Gender, Age,
  - Length of Use
  - Length of Treatment
  - Reliability of Instrument





# The Practice of Recovery

- The Clinical Connection (Build Support)
- Access to Qualified Treatment Providers
- Therapeutic Alliance
- Multiple Models
- Access to Support
- 12 Step Programs



# Emotional Competencies

- Self Awareness
- Verbal Access
- Emotional Regulation
- Empathic Response
- Passionate Interest





# The Practice of Recovery

- Practice and Repetition



- Learn from Failure

QUOTESVALLEY.COM  
**failure**  
**is success**  
**if we learn from it.**