SPECIAL POPULATIONS

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ASAM Disclosure of Relevant Financial Relationships Content of Activity: ASAM Review Course 2014

Name	Commercial Interests	Relevant Financial Relationships: What Was Received	Relevant Financial Relationships: For What Role	No Relevant Financial Relationships with Any Commercial Interests
Aykut Ozden, MD				X

SPECIAL POPULATIONS

- OVERVIEW
  - ADOLESCENTS
  - YOUNG ADULTS / COLLEGE STUDENTS
  - THE ELDERLY
  - TRAUMA and INJURY

1. ADOLESCENTS

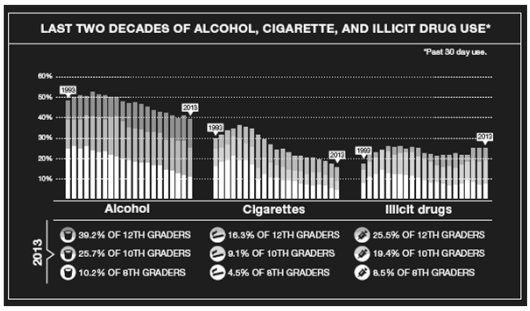
SPECIAL POPULATIONS

Epidemiology

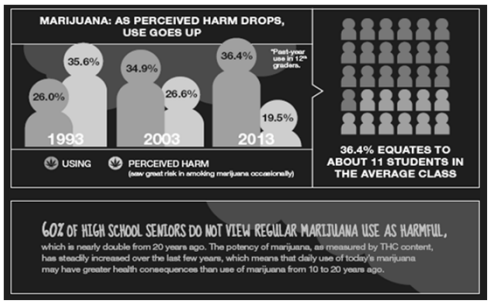
Three major national population-based studies:

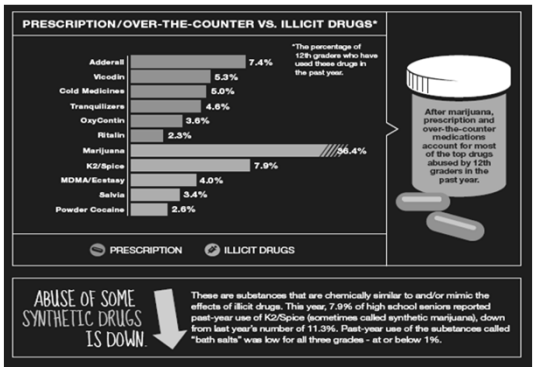
- ❖The Monitoring the Future (MTF) study
- ❖The National Survey of Drug Use and Health (NSDUH) study
- ❖The Youth Risk Behavior Surveillance System (YRBSS)

MONITORING THE FUTURE

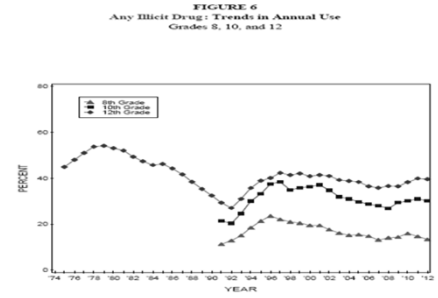


MARIJUANA USE/ PERCEIVED HARM

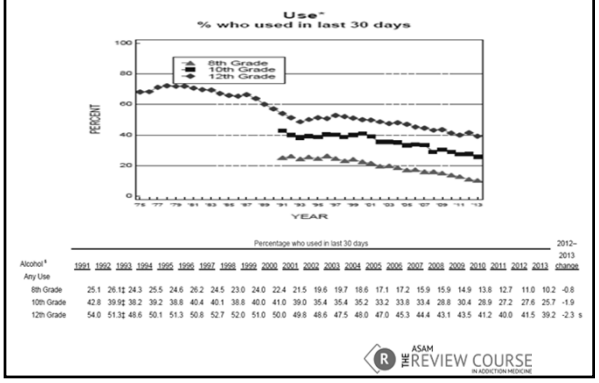




Annual use of ANY illicit drug
Monitoring The Future Study 1974-2012

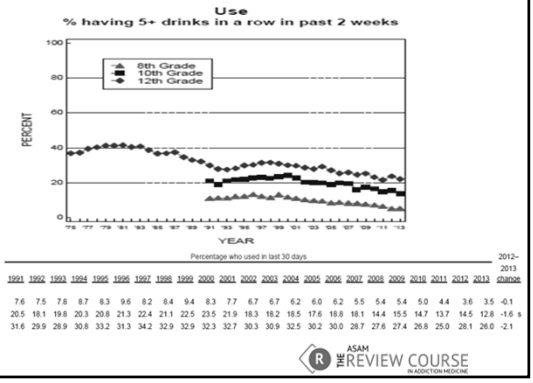


Alcohol - Use



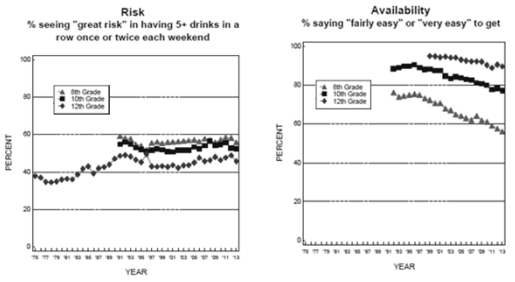
Alcohol[a] Any Use	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2012–2013 change
	Percentage who used in last 30 days																							
8th Grade	25.1	26.1	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	19.7	18.6	17.1	17.2	15.9	15.9	14.9	13.8	12.7	11.0	10.2	-0.8
10th Grade	42.8	39.9	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	35.4	35.2	33.2	33.8	33.4	28.8	30.4	28.9	27.2	27.6	25.7	-1.9
12th Grade	54.0	51.3	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3	44.4	43.1	43.5	41.2	40.0	41.5	39.2	-2.3 s

Alcohol – Binge Drinking

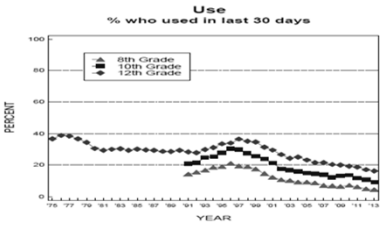


Been Drunk[b]	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2012–2013 change
	Percentage who used in last 30 days																							
8th Grade	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	6.7	6.2	6.0	6.2	5.5	5.4	5.4	5.0	4.4	3.6	3.5	-0.1
10th Grade	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	18.2	18.5	17.6	18.8	18.1	14.4	15.5	14.7	13.7	14.5	12.8	-1.6 s
12th Grade	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2	30.0	28.7	27.6	27.4	26.8	25.0	28.1	26.0	-2.1

Alcohol – Perceived risk of binge drinking and availability

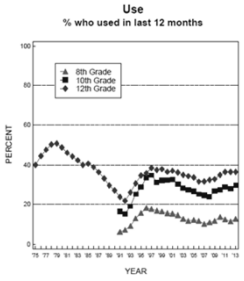


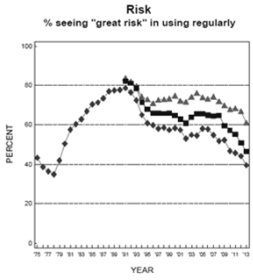
Cigarettes



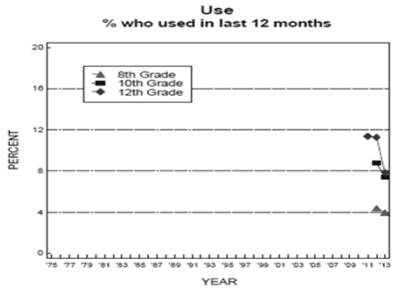
30-Day	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'12–'13 change
8th Grade	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7	7.1	6.8	6.5	7.1	6.1	4.9	4.5	-0.5
10th Grade	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	-1.7 s
12th Grade	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	16.3	-0.9

Marijuana





Synthetic Marijuana



Which prescription medications are being abused?

- Four Major Classes
  - Stimulants – medications used to treat ADHD
  - Opioid analgesics – pain medication
  - Sedatives/Anti-anxiety medications
  - Tranquilizers – for sleep disorders
- OTC cough medicines

The Extent of the Problem

- The Centers for Disease Control and Prevention has classified prescription drug abuse as **an epidemic**.
- Nearly one-third of people aged 12 and over who used drugs for the first time in 2009 began by using a prescription drug non-medically (NSDUH).
- According to the 2010 MTF study, prescription drugs are the most commonly abused drugs by 12th graders after alcohol, tobacco and marijuana.
- Each day an estimated 2,200 teenagers between ages 12 and 17 abuse prescription painkillers for the first time (SAMHSA, 2010)

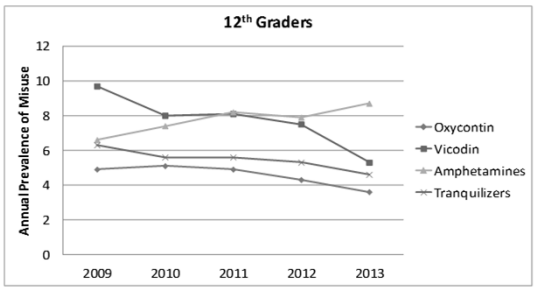
Prevalence

- In 2013, **21.5** percent of secondary school students indicate use without a doctor's orders of at least one prescription drug in their **lifetime.**
- **15.0** percent indicate such use in the **past year** (in 2008 these rates were 21.5 percent and 15.4 percent, respectively).
- Another study showed one in four teens (24 percent) reports having misused or abused a prescription drug at least once in their lifetime (up from 18 percent in 2008), which translates to about 5 million teens. That is a **33 percent increase over a five-year period.**

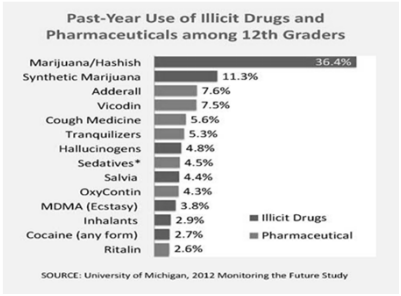
1. Johnston et al., 2014: Monitoring the Future national results on drug use: 2013 Overview
2. The Partnership Attitude Tracking Study

PRESCRIPTION DRUG ABUSE

MTF Study2012



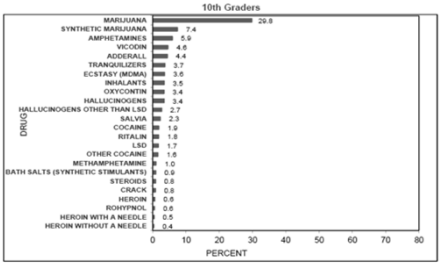
MTF study: Illicit vs. Pharmaceutical



Annual Prevalence of Use: Rx Drugs Vs Others 12TH GRADERS

Source. The Monitoring the Future study, the University of Michigan.

Annual Prevalence of Use: Rx Drugs Vs Others 10TH GRADERS



Source. The Monitoring the Future study, the University of Michigan.

OTC Cough/Cold Medicine Abuse

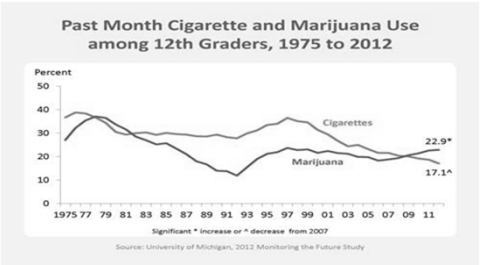
- While millions of Americans safely rely on over-the-counter (OTC) cough medicine to temporarily relieve their cough due to a cold, approximately **one out of 25 teens** reports abusing it to get "high."
- Today, roughly **one out of three teenagers** knows someone who has abused OTC cough medicine to get high.
- Only **59 percent of teens** strongly believe that abusing OTC cough medicine to get high is risky. That means that nearly half believe that it is not.

1. Johnston et al. 2014 2. Partnership at Drugfree.org

OTC Cough/Cold Medicine Abuse

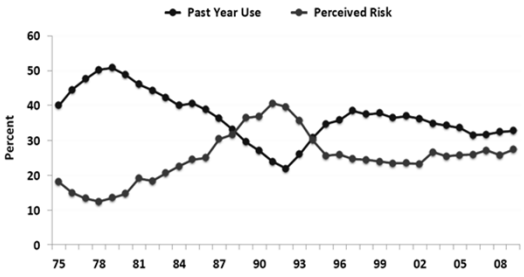
- Dextromethorphan (DXM):
  - An active ingredient in over 100 cough medicines e.g. Robitussin, Coricidin, TheraFlu, Vicks 44 cough relief products, Tylenol cough
  - Medically used for cough suppression and safe if used according to label instructions
  - At high doses, causes mild distortions of color and sound to visual hallucinations, "out-of-body" dissociative sensations, and loss of motor control.
  - Street names: Triple Cs, Robotripping, Orange Crush, Skittles, Red Devils

GROWING MARIJUANA PROBLEM



Changes in Attitude Lead to Changes in Use

Marijuana Use and Perceived Risk among 12th Graders, 1975 to 2009

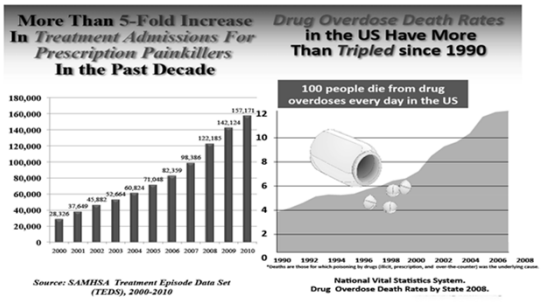


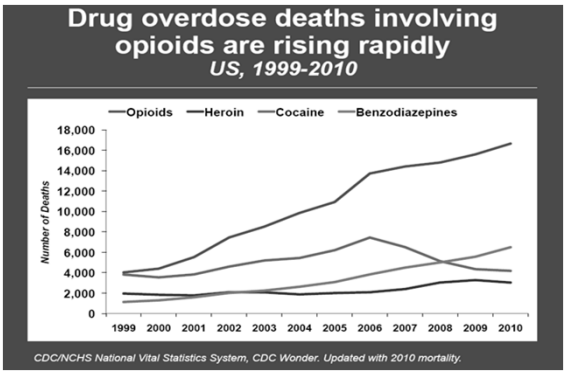
TEENS DON'T READ ABOUT THE RISKS OF CANNABIS FROM MEDICAL SITES. THEY READ ABOUT THE "BENEFITS" OF IT FROM "HIGH TIMES" OR NUMEROUS OTHER PRO-MJ WEBSITES

OPIOIDS

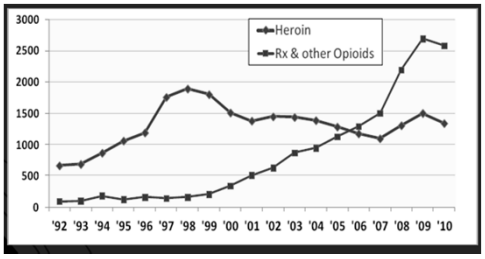
Opioid painkillers – Good for anything!?

PAINKILLER EPIDEMIC
AN AMERICAN HORROR STORY





Admissions 15-17 y/o treatment episode Dataset 1992-2010



Inhalants

- Not much increase but still popular in young adolescents, such as Nitrous Oxide, glue…
- Very easily available and very cheap
- Perception of risk has increased
- Very damaging to the developing brain
- Picture: Nitrous oxide

"whippets" and a cracker… both purchased legally from Amazon.com

ADOLESCENT SUD ETIOLOGY – 1

GENETIC PREDISPOSITION and PRENATAL EXPOSURE:

1. Family history

Genes affect all three steps: experimentation, repeated use, addiction, even taste and smell of a drug

2. Prenatal exposure to substances

PEER-RELATED FACTORS: Strongest predictor of adolescent substance *use*

1. Peer substance use (SU)
2. Positive peer attitudes for SU
3. Greater attachment to peers
4. Positive perception of peer attitudes and SU
5. Peer rejection

ETIOLOGY – 2

PSYCHOLOGICAL FACTORS:

- High novelty and sensation seeking
- Low harm avoidance
- High reward dependence
- High aggression or irritability
- Executive cognitive dysfunction (impairment in planning, attention, abstract thinking, foresight, judgment, self-monitoring, motor control)
- Affect dysregulation
- Impulsivity
- Low self-esteem
- Trauma and stressful events

ETIOLOGY – 3

PARENTAL RISK FACTORS:

- Parental SU or psychopathology
- Parents' beliefs / attitudes about SU
- Lack of closeness / attachment with parents
- Lack of parental involvement in child's life
- Lack of appropriate supervision / discipline
- Rejection or absence of parental authority
- Chaotic family
- Sibling drug use

ETIOLOGY – 4

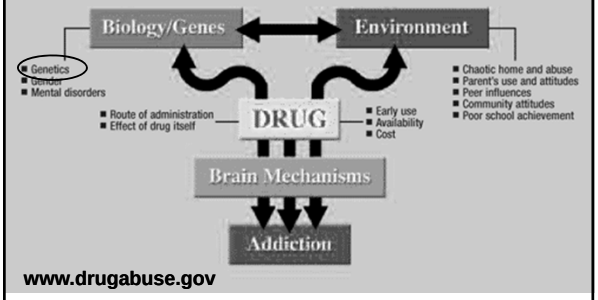
PSYCHIATRIC FACTORS:
Depression
Anxiety (mostly females): Social anxiety d/o, PTSD
ADHD
Conduct Disorder

ENVIRONMENTAL FACTORS:
Availability, i.e. density of retail outlets
Homelessness, poverty
Urban life
School's lax policies or enforcement
Media promotion

PROTECTIVE FACTORS

Female gender
Higher SES
High academic aspirations / achievement / self-esteem
Participation in prosocial activities
Close, affectionate relationship with parent or family member
Absence of parental marital problems and SUD
Clear family rules prohibiting drug use and providing supervision
Higher intelligence / problem-solving ability
Positive role models
Affiliations with religious institutions or spirituality
Better affect regulation
High perception of risk from drug use
Firm commitment to never use
Optimistic, high self esteem, risk avoidant

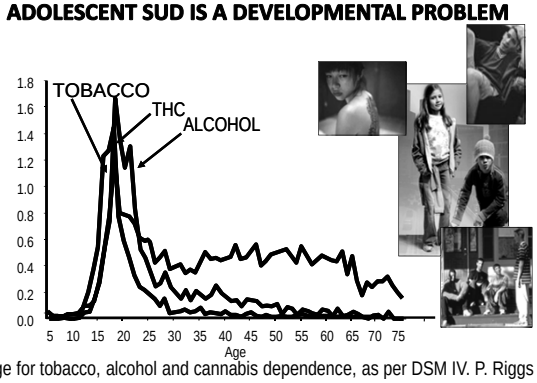
RISK FACTORS



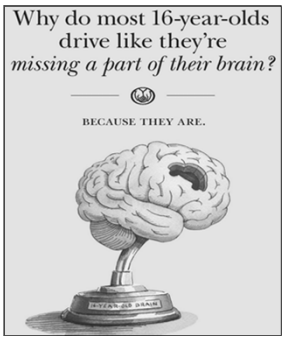
RISK AND PROTECTIVE FACTORS

Risk Factors	***Domain***	***Protective Factors***
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

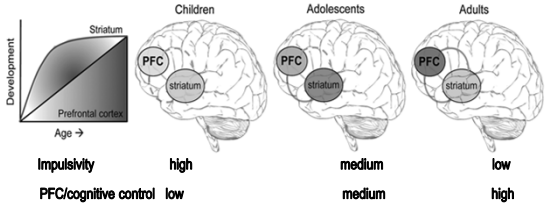
ADOLESCENT SUD IS A DEVELOPMENTAL PROBLEM



Age for tobacco, alcohol and cannabis dependence, as per DSM IV. P. Riggs



Adolescent Brain Development



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- Underdevelopment of the frontal lobe/prefrontal cortex and the limbic system make adolescents more prone to "behave emotionally or with 'gut' reactions"
- Adolescents tend to use an alternative part of the brain– the amygdala (emotions) rather than the prefrontal cortex (reasoning) to process information

Brain Research Conclusions

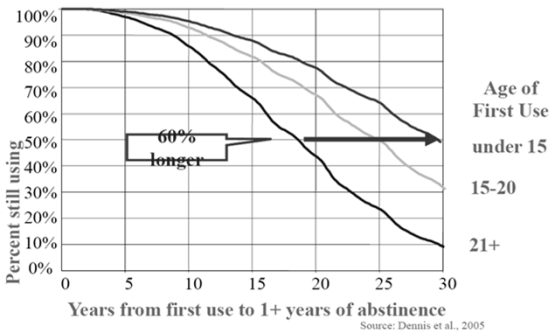
1. *Young brains are more susceptible to drug use than adults*
2. *Using drugs while the brain is still developing may have profound and long-lasting results:*
   - *Learning ability & emotional development*
3. *Implications of these studies are <u>enormous</u> for parents*

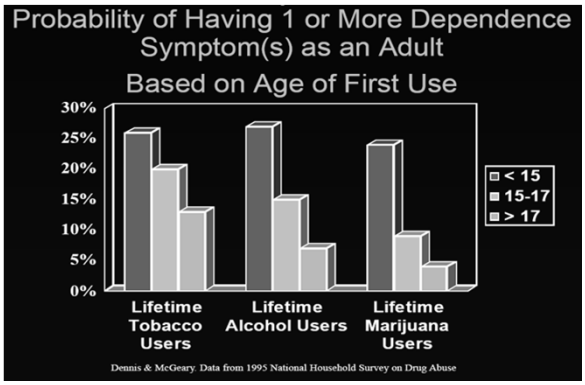
Nora Volkow M.D., Director NIDA, Drug Addiction, 2006

EARLY DRINKING

- *Teens who begin drinking before age 15 years are 4X more likely to develop alcoholism*

Archives of Pediatric and Adolescent Medicine 160(7):739, 2006





ASSESSMENT – 1

Extent and context of alcohol, nicotine and drug use
Consequences of use
Attitudes and control of use
Peer relations
Family functioning (incl. parental substance use)
Educational status
Legal involvement (incl. possession of weapons)
Use of free time
Psychological distress
Psychiatric disorders
Medical history, incl. risk taking behavior (HIV, Hep C, pregnancy, neurotoxicity, arrhythmias, etc.)

ASSESSMENT – 2

INFORMATION FROM:
Adolescent, parent / guardian, PCP, PO and school

INSTRUMENTS
Interviews: HEADSS or SSHADESS; Timeline Follow-Back; Computer-assisted interview (CAI); Self-Admin. Questionnaire (SAQ)

Teen Addiction Severity Index (TASI) (Kaminer et al 1991)
Personal Experience Screening Questionnaire (PESQ) (Winters, 1991)
Problem Oriented Screening Instrument for Teens (POSIT) (Rahdert 1991)
Withdrawal scales, i.e. CIWA-Ar, COWS, if applicable

LABORATORY
Pregnancy, Hep C / HIV (if risk +), RPR, TSH, LFTs, GGT, cbc, EEG, EKG, CT of the head

URINE TOXICOLOGY
Discuss confidentiality, adulteration risk, get consent, discuss outcomes, shows only recent use

SCREENING: DAST-A, AUDIT or CRAFFT (not CAGE)

C	Have you ever driven a ***C***ar when high or been in a car driven by a friend who was high?
R	Do you ever use drugs to ***R***elax, feel better about yourself or fit in?
A	Do you ever use drugs while you are ***A***lone?
F	Do you ever ***F***orget things you did while using drugs?
F	Do your ***F***amily or ***F***riends ever tell you that you should cut down on your drug use?
T	Have you ever gotten into ***T***rouble while you were using drugs?

Paper version is more reliable than interviewer.

Two or more "yes" answers suggest serious problems with substances and require further investigation. Knight et al. 1999

PREVENTIVE INTERVENTIONS: SCHOOL-BASED

- SOCIAL RESISTANCE SKILLS TRAINING
- COMPETENCE ENHANCEMENT TRAINING
- NORMATIVE EDUCATION
- Effectiveness:
  - Short-term modest effects. Long term unknown
  - Skills-based works better than knowledge/affective programs. Education alone does NOT work
  - Widely un-used in schools (27% adapted one of them)

PREVENTIVE INTERVENTIONS: FAMILY-BASED

- PARENT TRAINING
  - With or without adolescent
  - Focus: Bonding, communicating, pro-social skills, rule setting, monitoring activities…
  - More than half worked.
  - Long-term effectiveness unclear
  - Problem: Attendance

PREVENTIVE INTERVENTIONS: COMMUNITY-BASED

- Mass media campaigns
- Restrictions on access
- Community organizations, activities
- Governmental policy changes, i.e. minimum age, scheduling substances, medication return, banning substances such as “Spice.”
- Somewhat effective. Depends on components, coordination, available funds

Example: Disposal of Unused Medications

Ineffective Prevention Strategies

Universal Prevention

- Peer counseling, mediation, positive peer culture
- Non-promotion to succeeding grades
- After school activities with limited supervision, programming
- Drug information, fear arousal, moral appeal.
- DARE

Selected, Indicated Prevention

- Gun buyback programs
- Firearm training
- Mandatory gun ownership
- Redirecting youth behavior
- Shifting peer group norms
- Neighborhood Watch

U.S. Surgeon General, U.S. Department of Health and Human Services, 2001; National Institute of Justice, 1998; Gottfredson, 1997.

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ASAM DIMENSIONS

A MULTI-DIMENSIONAL ASSESSMENT MODEL that organizes data from clinical interviews:

Dimension 1: Acute Intoxication and/or Withdrawal Potential

Dimension 2: Biomedical Conditions/Complications

Dimension 3: Emotional, Behavioral or Cognitive Conditions/Complications

Dimension 4: Readiness to Change

Dimension 5: Relapse, Continued Use or Continued Problem Potential

Dimension 6: Recovery/Living Environment

ASAM PLACEMENT CRITERIA

Adolescent Levels of Care

- Detoxification Levels
- Level 0.5 Early Intervention
- Level I Outpatient Services
- Level II Intensive Outpatient/Day Treatment/ /Partial Hospitalization Services
- Level III Residential/Inpatient Services
- Level IV Medically Managed Intensive Inpatient Services

WHAT WORKS

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

What Does Not Work

- Confrontation (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

Evidence Based Adolescent Psychosocial Treatments

- BSFT – Brief Strategic Family Therapy
- MST – Multi-Systemic Therapy
- MDFT- Multidimensional Family Therapy
- FFT - Functional Family Therapy

12-STEP MUTUAL HELP GROUPS

- There is not enough research but the ones so far are mostly positive
- Effective adjustment to treatment
- S. Jaffe has modified 12-steps for adolescents as some of the concepts are not useful or acceptable
- Longer attendance = better outcome

OVERVIEW of EVIDENCE-BASED NON-PHARMACOLOGICAL APPROACHES

- Four family therapies: BSFT, MDFT, FFT, MSFT
- Motivational Interviewing / Enhancement Therapy (MI or MET)
- Cognitive-Behavioral Therapy (CBT)
- Contingency Management Strategies (CM)
- Dialectical Behavioral Therapy (DBT
- Adolescent Community Reinforcement Approach (A-CRA)
- AA
- Next: Mindfulness?
- Next: Fine-tuning these therapies. Why don't they work more?
- Use more empathy? Positive correlation b/w empathy and outcome
- How can therapist commitment and fidelity be increased?

PSYCHOPHARMACOLOGY FOR ADOLESCENT SUDs

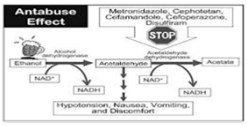
"This prescription doesn't cure anything, but it has fewer side effects than other drugs."

ALCOHOL

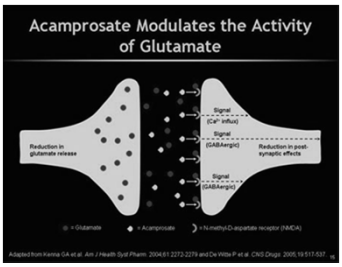
Disulfiram in adolescents

- Niedederhofer and Staffen, 2003:
  - Double-blind placebo controlled trial of 29 pts
  - Abstinence significantly improved with disulfiram
  - More GI side-effects than placebo
  - Number of drop outs not reported
- Myers et. al., 1994
  - Small case series of 2 pts. One dropped out, other improved

Adolescent use can be tricky due to impulsivity and antabuse effect:



ACAMPROSATE



Acamprosate in adolescents

- Only one study so far. Niederhofer and Staffen. Eur Child Adolesc Psychiatry 2003 12 (3): 144-8
- It is DBRPC but small: 13 pts in each group
- Ages: 16-19
- Results: 90-day abstinence is 7/13 vs. 2/13 in the Acamprosate group
- No SEs
- Adult studies are weak at best, i.e. COMBINE study

Naltrexone in adolescents

- Only case reports and one open study
- Average drinks and craving decreased
- No adolescent study with long-acting naltrexone.
- Potential benefit for patients with high levels of craving, good compliance and family history of alcoholism
- Poor compliance in teens

Other potential medications for alcoholism

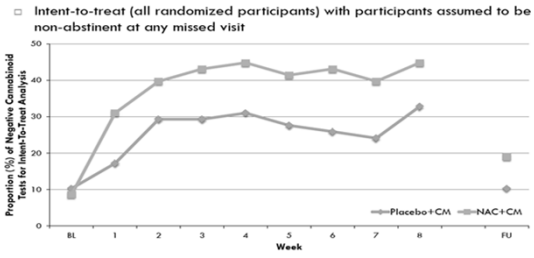
- Topiramate
- Ondansetron
- Nalmafene
- SSRIs
- Under investigation:
  - Antalarmin (CRF-1 atg), Aripiprazole, Baclofen, Buprenorphine, Carbamazepine, Duloxetine, Gabapentin, Glu atg, Kudzu, Levetiracetam, NAC, Mecamylamine, Memantadine, Mirtazapine, Pregabaline, Quetiapine, Rimonabant, Valproate, Varenicline, Zonisamide

CANNABIS

N-Acetylcysteine (NAC) for Cannabis Dependence

- Preclinical research indicates a potential role for N-acetylcysteine (NAC), via glutamate modulation, in the treatment of substance use disorders (Kalivas et al., 2008)
- NAC has a long-established safety record in adults and children (FDA approved since 1963) and is inexpensive and readily available over-the-counter at supplement stores.
- Double blind, cannabis-dependent adolescents (n=116); NAC (1200 mg) or placebo given twice a day. Weekly visits with contingency management and brief counseling - 60% retained through end of treatment week 8
  - (Gray et al, AJA 2012)

NAC for Cannabis-Dependent Adolescents with Contingency Management



New treatments for cannabis

- No FDA approved medication yet
- Work is promising on the following:
  - Agonists: Dronabinol, Nabilone
  - Antagonists: Rimonabant
  - Anti-craving: Lofexidine
  - Combination: Lofexidine + Dronabinol
  - Others: Gabapentin, NAC

STIMULANTS

ADHD TREATMENT IN SUD

- Most of the studies have some "signal" in terms of reducing ADHD and half suggest some benefit in terms of substance use if there is an ADHD response.
- None of trials reported diversion or misuse.
- However, try to use non-stimulants if possible, ie Atomoxetine, Guanfacine, Clonidine.
- Then, try time-released stimulants, i.e. OROS- methylphenidate, Lisdexamfetamine.
- Involve parent
- Treatment contract, with clear wording on misuse
- Consider cardiovascular and other medical conditions/effects if patient abuses a drug concomitantly.

NICOTINE

ADOLESCENT SMOKING

Despite considerable youth smoking prevention efforts, nicotine dependence almost always starts in adolescence 90% of adult smokers started before age 18

- Smoking rate ("smoked in past 30 days") gradually increased by age 2% of 12-13 year olds
- 8% of 14-15 year olds
- 17% of 16-17 year olds
- 34% of 18-20 year olds
- (peak rate of 37% is at age 21-25)

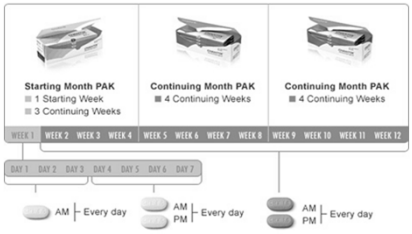
Backinger et al., 2003; NSDUH, 2008

Meta-analysis of smoking cessation treatments in adolescence

- Overall abstinence rate is 9.1% in treatment groups
- 6.2% in control groups
- Difference of only 2.9% (Odds Ratio 1.5)
- Some treatments yielded relatively higher abstinence rates than others: Motivational Enhancement, Cognitive/Behavioral, Social Influence.
- ≥5 sessions
- So, no clear benefit

Sussman et al 2006

Varenicline



Varenicline in adolescents

- Two published feasibility studies:
  - Faessel et al 2009
  - Gray et al 2011
- However, no RCTs yet. Gray et al is conducting one (n=166) with NIDA support now.
- Gray's 2011 study showed Varenicline decreased daily cigarette use from 14 to 1 per day, in seven weeks

Nicotine patch

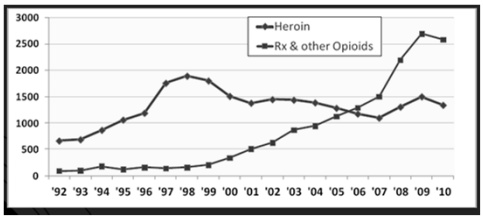
- Mixed results across studies.
- Most positive findings with nicotine patch. (Moolchan et al., 2005) 21% end-of-treatment abstinence, compared with 5% for placebo
- ≥1 pack cigs/day: start with 21 mg patch
- <1 pack cigs/day: start with 14 mg patch
- Typically continue at least 6 weeks, then step down in dose (e.g., 14 mg, 7 mg) every 2 weeks, then discontinue

Bupropion SR

- Titrating to 300 mg/day total dose appears necessary (Muramoto et al., 2007)
- Combination with behavioral treatment (contingency management) appears to significantly enhance abstinence outcomes (Gray et al., 2011)
- Consider using Bupropion XL for once-daily dosing, though this has not been studied specifically for smoking cessation

OPIOIDS

Admissions 15-17 y/o treatment episode
Dataset 1992-2010



Buprenorphine vs. Clonidine in adolescent opioid dependence

- Single site trial, N=38, ages 15-17yrs.
- Dose range: 6-8mg.
- 28-day Buprenorphone SL vs. Clonidine 0.1-0.3mg plus CRA and CM for opioid negative urines.
- Results: Bup group compared to clonidine group showed
  - Greater retention (72% vs. 39%)
  - Higher percent of opioid negative urines (64% vs. 32%)

Marsch et al., 2005, Arch of Gen Psychiatry

Extended vs. Short-term Buprenorphine-naloxone for Treatment of Opioid-addicted Youth

- Multi-site trial, N=154, age 15-21 yrs.
- Dose range: 8mg -24mg SL
- 12-week Bup/Nal (BUP) vs. 2 weeks of Bup/Nal (Detox) plus twice a week counseling
- Results:
- BUP condition compared to DETOX had fewer opioid-positive urines (p<. 001),
- better retention (p<. 001),
- less self-reported opioid use (p< .001),
- less injecting (p = .02), and
- received less non-study addiction treatment (p<. 004)

Woody et al 2008

Case Series: Naltrexone XR in Adolescents and Young Adults with Opioid Dependence

- Single site. N=16. Mean ages 18.5 yrs.
- 75% used either heroin or Rx opioids and 50% used both
- 63% (n=10) were retained in treatment for 4 months. (7 continued past 4 months)
- 56% had "good" outcomes.
- Well tolerated (one pt discontinued meds due to injection site discomfort)
- Feasible

Fisman et al 2010

METHADONE

- Adolescent must have failed two other treatments, such as rehab
- Parent consent required
- No evidence yet for its effectiveness in this age group

COMORBID SUD and PSYCHIATRIC CONDITIONS in ADOLESCENTS

ADHD and SUD

- In SUD adolescents, ADHD can be found in 30-50%
- In most cases ADHD comes first
- ADHD increases SUD risk: %15.2 vs. %5.6
- ADHD is more prevalent in SUD adolescents than normals: %10.8 vs. %3.7*
- If there is ADHD, SUD starts at earlier age …
- … and the prognosis is worse, for both conditions
- Conduct Disorder + ADHD: Risk of SUD is higher than each alone

IMPACT OF ADHD TREATMENT

- Wilens et al 2003: Stimulant treated subjects were 5.8 times less likely to develop SUD, based on a meta-analyses of six studies covering 4-year follow-up
- Wilens 2008: In a 5-year f/u, stimulant use decreased SUD rates (incl. cigarette smoking) even after CD is controlled
- Katusic 2005: A 17-year f/u study showed that treated ADHD patients had 14% less SUD than untreated ones
- MTA (Molina 2008): ADHD treatment (8 years) is not protective for SUD, but there is no worsening either
- Most studies point to a benefit, if any, only if ADHD treatment starts at earlier age
- Late start treatment of ADHD is not known to be protective of SUD
- Also, protective effects of stimulants do not extend into late adolescence or adulthood

DISRUPTIVE BHV DISORDERS

Prevalence 42 – 85 %

Early onset CD strongly predicts SUD

CD usually precedes SUD and worsens prognosis

Females with CD progress more rapidly to SUD

ADHD + CD has more robust risk of SU than either alone

ODD can also increase risk of SUD

It is likely that SUD-DBD relationship is reciprocal

SU results in poor judgment and association w/delinquent peers, leading to CD type behaviors

BIPOLAR DISORDER and SUD

- Bipolar d/o (BPD) is a risk factor for early onset SUD
- In BPD, SUD is around 8 – 40%
- Even in subsyndromal BPD the rates of SUD are higher than normals
- SUD is a high risk factor for non-adherence to treatment, as well as hastened relapse, more sxs, low rates of full remission, higher rates of impulsivity and **suicidality**
- Which comes first?: 47% SUD, 35% BPD and 17% both

DEPRESSION and SUD

- Among the most common comorbid conditions in in teens with SUD
- Relation is stronger in MJ users than alcohol: MDD is 4.5x more likely in MJ users than not.
- More common in adolescent-onset SUD than adult-onset SUD
- Comorbidity brings higher rates of suicide, lower self-esteem and difficulty in treatment
- Prevalence: In depression 18 – 35 %
- MDE often precedes SUD but treatment decreases risk of SUD
- Secondary depression is not as likely to remit w/ abstinence

ANXIETY DISORDERS and SUD

- SUD rates are between 15-30%
- In clinically recruited teens with SUD, anxiety disorder rates were higher than normal population
- Social anxiety d/o and PTSD precede SUD
- Panic d/o and GAD follow SUD
- Sometimes anxiety d/o's delay experimentation with substances, i.e. separation anxiety
- Self-medication hypothesis has less validity
- Having anxiety d/o in *both* parents is the predominant predictor of anxiety d/o in children

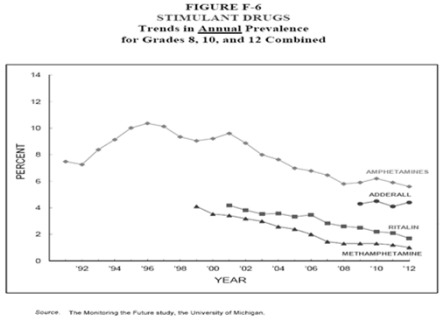
SCHIZOPHRENIA and SUD

- In SUD (inpatient sample) sch was found to be 3-7% in two studies
- In adult schizophrenia, comorbid SUD is shown up to 40% making it the most comorbid condition
- Higher SUD rates in males and younger age
- ETOH and MJ lead, followed by stimulants and hallucinogens
- Cannabis use in adolescence, in a dose-dependent manner, is associated with an increased risk of developing schizophrenia (Zammit 2002)
- Earlier age of MJ use predicted more psychotic sxs
- Substance-induced psychosis clears in hours to days, unless prolonged/heavy use

STIMULANT ABUSE

- Twenty-two percent of college students who were prescribed stimulants for ADHD reported to use them to get high and 29% admitted to giving or selling to friends. Upadhyaya (2005)
- Stimulants can be crushed and snorted or used iv at times but that use has been found to be rare

Stimulant abuse in adolescents

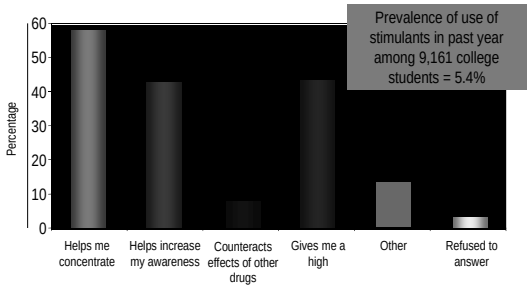


OROS-Methylphenidate for ADHD and SUD

- **Largest study to date:**
  - 300 adolescent substance abusers (mostly cannabis use disorders). Titrated to 72mg/day
  - Well-tolerated, compliance high, exceptionally well-executed
- **Findings similar to earlier treatment trials:**
  - Both treatment arms show significant improvement in ADHD symptoms
  - No significant difference between groups on primary ADHD (self-report ADHD rating) or primary substance use outcome measure (self-report). Although positive on some secondary ADHD (CGI) and substance use outcome measures (urine drug screens) PRiggs

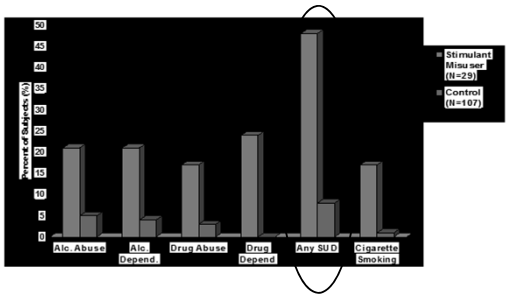
Misuse Does Not Always Equal Abuse

What Motivates Undergraduates at One Institution to Use Stimulants Illicitly?
T. Wilens



Characteristics of Young Adults Who Divert or Misuse Stimulant Medications: A Midpoint Analysis

(Wilens et al. AACAP presentation Oct 2011; NIDA study)

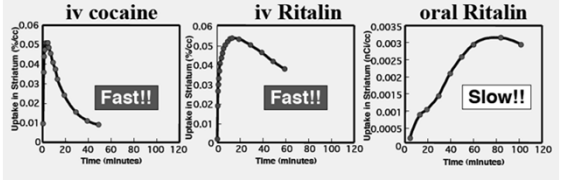


Stimulant Misuse and Diversion

- **N=22 Studies (N>113,000 participants); mostly survey studies in college students (80%)**
- **10-20% prevalence of non medical use of stimulants**
- **65-85% of stimulants diverted from "friends"**
  - **Majority *not* "scamming" local docs**
  - **Not seen as potentially dangerous**
  - **Mostly happens in youth with failing grades**

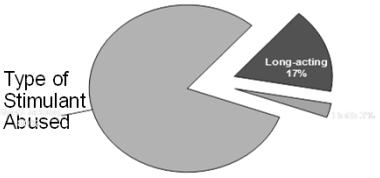
(McCabe and Teeter, Addiction; 2005; Arria et al. Sub Abuse:2007; Wilens et al. JAACAP: 2006, 2008)

Rate of Drug Uptake Into the Brain



Illicit Use Survey From ADHD Clinics

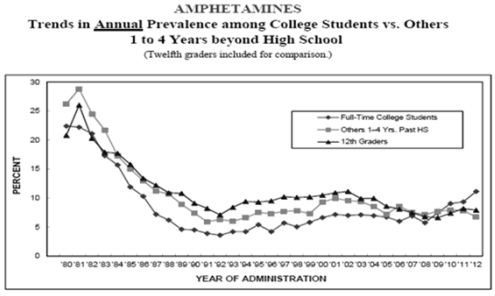
- Of 335 survey responses – 73 (14%) reported stimulant abuse



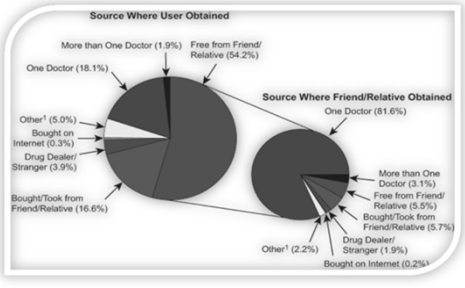
- Most common method of abuse was crushing and inhaling (N=75%)

Bright, G. Medscape J Med. 2008 May 7;10(5):111.

Stimulant Misuse in College Students



Diversion and Source of Prescription Medications



Responding to Prescription Drug Abuse, CADCA National Forum, February 2013

2. YOUNG ADULTS / COLLEGE AGE GROUP

EPIDEMIOLOGY

- More than 81% of college students have consumed alcohol
- Monthly: 36% binge drink, 4% daily drink
- 18-21% meet criteria for alcohol use d/o
- Of these, 43% continue to meet criteria after college
- College is the most heavy episodic drinking period

CONSEQUENCES

- DAMAGE TO SELF
  - Death, injury, sexual abuse, unsafe sex, suicide, DUI, health problems, arrests, academic problems
- DAMAGE TO OTHERS
  - Similar. Assault, rape, collateral damage in accidents
- DAMAGE TO INSTITUTION
  - Vandalism

RISK FACTORS

- Parental drinking, genes… same as other SUDs
- Normative nature of drinking
- Positive expectations from drinking
- Affective factors, i.e. mood control
- Mostly Caucasian males and Native Americans
- Involvement in sports *increases* risk
- Membership in fraternity/sorority, too

PREVENTION

- Brief motivational interviewing
- BASICS (Brief Alcohol Screening and Intervention for College Students)
- ATP (Alcohol Skills Training Program) – CBT based
- Expectancy Challenge Intervention (CBT-based)
- Feedback-only Interventions (mail or online)

ENVIRONMENTAL INTERVENTIONS

- Increasing enforcement of minimum age laws
- Restricting access to alcohol retail outlets
- Restricting alcohol advertisements
- Disciplinary actions
- Information for new students
- Promoting alcohol-free options
- Creating a supportive, health-promoting environment

TRAUMA and INJURY

- 50% of ALL major and 22% of minor traumas are alcohol-related
- 31% of MVAs are alcohol related
- Alcohol is also involved in non-MVAs as well: 60% of fatal burns, 42% of pedestrian falls…
- SBIRT works in ER's
- ER visit is a great window of opportunity to start interventions and it works!

3. THE ELDERLY

"That is not one of the seven habits of highly effective people."

AGE RELATED RELEVANT ISSUES IN THE ELDERLY

- Age-related brain changes
- Changes in drug sensitivity
- Use of different drugs
- Side effects more severe
- Different access to the drugs
- Different settings (i.e. nursing homes)
- Age-specific screening instruments needed
- Stigma
- Need better education re prescription drugs
- Data systems to track prescription use

EFFECTS of AGING

- Pharmacokinetics change with aging
  - Reduction in renal drug elimination resulting in increased drug serum levels and the potential for adverse drug reactions.
  - Volume of drug distribution decreases resulting in higher plasma concentrations.
- Pharmacodynamic effects with aging
  - Neurotransmitter receptor properties may change with age.
  - Reduction in homeostatic mechanisms resulting in more time required to regain steady-state following drug therapy

Factors that Contribute to Substance Abuse in the Elderly

- Substance use disorder earlier in life
- Genetics
- Major life changes
- Disengagement
- Deterioration of health
- Dangerous health care prescribing practices

- NSDUH 2012 – 14% of men and 3% of women binge drink, above age 50
- Prescription drug abuse follows alcohol. 18-41% misuse their meds at times. Women>Men
- Main reasons are anxiety, insomnia and pain. Not to get high.
- Nicotine: 10% of 65+ y/o whereas it is 24% in 18-44 age group
- Depression is the most common comorbid d/o with >50% prevalence
- NIAAA recommends no more than 7 drinks per week or 3 per day for age>65

Assessment and Diagnosis

- Problems With DSM for Diagnosis
  - Older adults who consume smaller amounts go undetected as having a substance use problem.
  - Older adults' substance us less likely interferes with social or occupational functioning.
  - DSM criteria are not very effective. False negatives.
  - Screening: AUDIT (cut-off 7, not 8) or MAST-Geriatric version.

Brief Interventions and Motivational Counseling

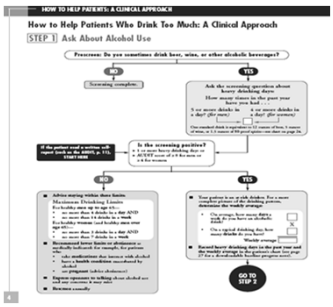
- Give feedback on screening
- Discuss reasons for drinking
- Discuss consequences of drinking
- Discuss reasons to cut down or quit
- Develop strategies for achieving goal
- Develop an agreement in the form of a written contract.
- Identify obstacles to achieving goal.
- Discuss strategies to overcome obstacles
- Summarize session.

TREATMENT

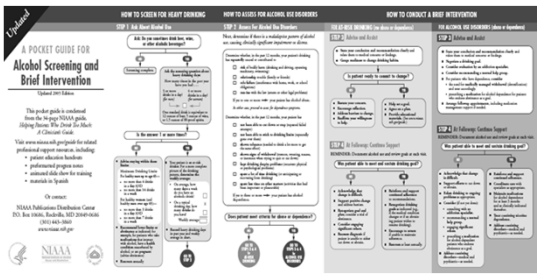
- Brief Interventions
  - GOAL (Guiding Older Adults Lifestyles)
  - Health Profile Project
  - CBT, MET…
- 12-Step
- Psychosocial interventions are completed by old adults more than the young
- Medications are seldom used. No evidence for effectiveness in this age group.

NIAAA GUIDELINES

NIAAA FLYER ON HOW TO SCREEN FOR ALCOHOL USE PROBLEMS



NIAAA POCKET GUIDE FOR ALCOHOL SCREENING and BRIEF INTERVENTION



NIAAA POCKET GUIDE FOR ALCOHOL SCREENING and BRIEF INTERVENTION

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