Orientation to Diagnosis and Initial Therapy in Substance Use Disorders

JABSOM, UHM

ADDICTION, ABBREVIATED (2 HR.) – 2019

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Affiliations and Obligations (DISCLOSURE STATEMENT)

- I have no commercial contacts with pharmaceutical or other agencies who might benefit by or suffer from my presentation.
- No medical students or resident physicians were harmed in the preparation of this talk.
- I have been known to prescribe medications, on occasion. I am not taking any, though many believe that I should.
- I shall warn you if I propose any off-label therapies or medication uses.

Obligatory Learning Objectives

By the end of my presentation, participants will be able to:

- Correctly differentiate between substance abuse, substance dependence, and substance use disorders using DSM5 nomenclature
- Distinguish between community-based recovery and formal therapy, and articulate the connection between the two.
- Describe 3 current effective pharmacotherapies for substance use disorders
- Satisfactorily and objectively discuss the role of 12-step programs in recovery, to a patient.
- Name or be able to readily locate two effective screening tools of substance use disorders

Obligatory Learning Objectives

By the end of my presentation, participants will be able to:

- Correctly differentiate between substance abuse, substance dependence, and substance use disorders using DSM5 nomenclature
  - "Abuse/dependence" obsolete; all now "substance use disorder"
- Distinguish between community-based recovery and formal therapy, and articulate the connection between the two.
  - Simply, therapy is compensated and evidence-based
- Describe 3 current effective pharmacotherapies for substance use disorders E.g., naltrexone, disulfiram, methadone, buprenorphine
- Satisfactorily and objectively discuss the role of 12-step programs in recovery, to a patient. Provided
- Name or be able to readily locate two effective screening tools of substance use disorders
  - Provided

Instruments for SUDs (this page: DAST)

In the following statements "drug abuse" refers to

- The use of prescribed or over-the-counter drugs in excess of the directions, and
- Any nonmedical use of drugs.
- The various classes of drugs may include cannabis (e.g., marijuana, hashish), solvents (e.g., paint thinner), tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., lysergic acid diethylamide [LSD]), or narcotics (e.g., heroin). Remember that the questions do not include alcoholic beverages.

Please answer every question. If you have difficulty with a question, then choose the response that is mostly right.

These Questions Refer to the Past 12 Months			
1.	Have you used drugs other than those required for medical reasons?	Yes	No
2.	Do you abuse more than one drug at a time?	Yes	No
3.	Are you always able to stop using drugs when you want to?	Yes	No
4.	Have you ever had blackouts or flashbacks as a result of drug use?	Yes	No
5.	Do you ever feel bad or guilty about your drug use?	Yes	No
6.	Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
7.	Have you neglected your family because of your use of drugs?	Yes	No
8.	Have you engaged in illegal activities in order to obtain drugs?	Yes	No
9.	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
10.	Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding)?	Yes	No

Interpretation (Each "Yes" response = 1)

Score	Degree of Problems Related to Drug Abuse	Suggested Action
0	No Problems Reported	None At This Time
1–2	Low Level	Monitor, Reassess At A Later Date
3–5	Moderate Level	Further Investigation
6–8	Substantial Level	Intensive Assessment

Source: Adapted from Addictive Behaviors, 7(4), Skinner, H.A. The drug abuse screening test, 363–371, copyright 1982, with permission from Elsevier. Available online at http://www.drugabuse.gov/Diagnosis-Treatment/DAST10.html.

Skinner Trauma History

Since your 18th birthday, have you

Had any fractures or dislocations to your bones or joints?
Been injured in a road traffic accident?
Injured your head?
Been injured in an assault or fight (excluding injuries during sports)?
Been injured after drinking?

A score of two or more positive responses to the five questions has been shown to indicate a high probability of excessive drinking or alcohol abuse.

Source: Skinner et al. 1984, reprinted with permission from American College of Physicians–American Society of Internal Medicine (ACP–ASIM).

CAGE Questionnaire

Have you ever felt you ought to **C**ut down on your drinking?
Have people **A**nnoyed you by criticizing your drinking?
Have you ever felt bad or **G**uilty about your drinking?
Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (**E**ye-opener)?

One or more "yes" responses constitute a positive screening test. Note, however, that due to language barriers, individual interpretation of the questions, or other confounding factors, individuals answering "no" to all CAGE questions may still be at risk due to elevated drinking levels.

Source: Maisto et al. 2003.

CAGE-AID: The CAGE Questions Adapted To Include Drugs

Have you felt you ought to **C**ut down on your drinking or drug use?
Have people **A**nnoyed you by criticizing your drinking or drug use?
Have you felt bad or **G**uilty about your drinking or drug use?
Have you ever had a drink or used drugs first thing in the morning to steady your nerves or to get rid of a hangover (**E**ye-opener)?

One or more "yes" responses constitute a positive screening test. Note, however, that due to language barriers, individual interpretation of the questions, or other confounding factors, individuals answering "no" to all CAGE-AID questions may still be at risk due to elevated drinking or drug use levels.

Source: Brown and Rounds 1995.

The TWEAK Questionnaire

Tolerance: (a) How many drinks can you hold, or (b) How many drinks does it take before you begin to feel the first effects of the alcohol?

Worried: Have close friends or relatives worried or complained about your drinking in the past year?

Eye openers: Do you sometimes take a drink in the morning when you first get up?

Amnesia: Has a friend or family member ever told you about things you said or did while you were drinking that you could not remember?

Kut down: Do you sometimes feel the need to cut down on your drinking?

The TWEAK questionnaire was originally developed to screen for risk drinking during pregnancy (Russell et al. 1991). It can also be used to screen for harmful drinking in the general population (Chan et al. 1993).

Scoring: A 7-point scale is used to score the test. The Tolerance question scores 2 points if (a) the patient reports he or she can hold more than five drinks without falling asleep or passing out, or (b) if it is reported that three or more drinks are needed to feel high. A positive response to the Worry question scores 2 points. A positive response to the last three questions scores 1 point each.

A total score of 3 or 4 usually indicates harmful drinking. In an obstetric patient, a total score of 2 or more indicates the likelihood of harmful drinking.

Source: The National Institute on Alcohol Abuse and Addiction Web site at http://www.niaaa.nih.gov/publications/tweak.htm

The Alcohol Use Disorders Identification Test (AUDIT): Interview Version

1. How often do you have a drink* containing alcohol?
   [ ] Never (0) [Skip to Questions 9–10]
   [ ] Monthly or less (1)
   [ ] 2 to 4 times a month (2)
   [ ] 2 to 3 times a week (3)
   [ ] 4 or more times a week (4)

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   [ ] 1 or 2 (0)
   [ ] 3 or 4 (1)
   [ ] 5 or 6 (2)
   [ ] 7, 8, or 9 (3)
   [ ] 10 or more (4)

3. How often do you have six or more drinks on one occasion?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

[Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0]

4. How often during the last year have you found that you were unable to stop drinking once you had started?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

5. How often during the last year have you failed to do what was normally expected of you because of drinking?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

7. How often during the last year have you had a feeling of guilt or remorse after drinking?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   [ ] Never (0)
   [ ] Less than monthly (1)
   [ ] Monthly (2)
   [ ] Weekly (3)
   [ ] Daily or almost daily (4)

9. Have you or someone else been injured as the result of your drinking?
   [ ] No (0)
   [ ] Yes, but not in the last year (1)
   [ ] Yes, during the last year (2)

10. Has a relative, friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?
   [ ] No (0)
   [ ] Yes, but not in the last year (1)
   [ ] Yes, in the last year (2)

Record the total of the specific items. [ ]

*In determining the response categories it has been assumed that one drink contains 10 g alcohol. In countries where the alcohol content of a standard drink differs by more than 25 percent from 10 g, the response category should be modified accordingly.

Source: Babor et al. 2001. Available at http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf

A self-report version of the AUDIT is also available in Babor et al. 2001.

Scoring and Interpretation of the AUDIT

The minimum score (for nondrinkers) is 0 and the maximum possible score is 40. A score of 8 is indicative of hazardous and harmful alcohol use, and possibly of alcohol dependence. Scores of 8–15 indicate a medium level and scores of 16 and above a high level of alcohol problems. Babor et al. (2001) recommend a cutoff score of 7 for women and individuals over 65 years of age; Bradley et al. (1998) recommended an even lower cutoff score of 4 points for women. For patients who are resistant, uncooperative, or noncommunicative, a clinical screening procedure (described by Babor et al. 2001) may be necessary.

Michigan Alcoholism Screening Test (MAST)

0.	Do you enjoy a drink now and then?	**YES**	**NO**
(2) 1.	*Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people)	**YES**	**NO**
(2) 2.	Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening?	**YES**	**NO**
(1) 3.	Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking?	**YES**	**NO**
(2) 4.	*Can you stop drinking without a struggle after one or two drinks?	**YES**	**NO**
(1) 5.	Do you ever feel guilty about your drinking?	**YES**	**NO**
(2) 6.	*Do friends or relatives think you are a normal drinker?	**YES**	**NO**
(2) 7.	*Are you able to stop drinking when you want to?	**YES**	**NO**
(5) 8.	Have you ever attended a meeting of Alcoholics Anonymous (AA)?	**YES**	**NO**
(1) 9.	Have you gotten into physical fights when drinking?	**YES**	**NO**
(2) 10.	Has your drinking ever created problems between you and your wife, husband, a parent, or other relative?	**YES**	**NO**
(2) 11.	Has your wife, husband (or other family member) ever gone to anyone for help about your drinking?	**YES**	**NO**
(2) 12.	Have you ever lost friends because of your drinking?	**YES**	**NO**
(2) 13.	Have you ever gotten into trouble at work or school because of drinking?	**YES**	**NO**
(2) 14.	Have you ever lost a job because of drinking?	**YES**	**NO**
(2) 15.	Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?	**YES**	**NO**
(1) 16.	Do you drink before noon fairly often?	**YES**	**NO**
(2) 17.	Have you ever been told you have liver trouble? Cirrhosis?	**YES**	**NO**
(2) 18.	**After heavy drinking have you ever had delirium tremens (DTs) or severe shaking or heard voices or seen things that really weren't there?	**YES**	**NO**
(5) 19.	Have you ever gone to anyone for help about your drinking?	**YES**	**NO**
(5) 20.	Have you ever been in a hospital because of drinking?	**YES**	**NO**
(2) 21.	Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem that resulted in hospitalization?	**YES**	**NO**
(2) 22.	Have you ever been seen at a psychiatric or mental health clinic or gone to any doctor, social worker, or clergyman for help with any emotional problem where drinking was part of the problem?	**YES**	**NO**
(2) 23.	***Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages? If YES, how many times? _____	**YES**	**NO**
(2) 24.	Have you ever been arrested, or taken into custody, even for a few hours, because of other drunk behavior? If YES, how many times?_____	**YES**	**NO**

* Alcoholic response is negative
** 5 points for each DT
*** 2 points for each arrest

MAST Scoring System

In general, five points or more would place the subject in alcoholic category. Four points would be suggestive of alcoholism, and three points or fewer would indicate the subject is not alcoholic (Selzer 1971).

Source: American Journal of Psychiatry, 127, 1653–1658 (1971). Copyright (1971). The American Psychiatric Association, http://ajp.psychiatryonline.org. Reprinted by permission. See http://www.niaaa.nih.gov/publications/mast.htm.

Self-Administered Short Michigan Alcoholism Screening Test (SMAST)

Patient Name: _____

Date of Birth: _____

Date of Administration: _____

1. Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people.)	**YES**	**NO**
2. Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking?	**YES**	**NO**
3. Do you ever feel guilty about your drinking?	**YES**	**NO**
4. Do friends or relatives think you are a normal drinker?	**YES**	**NO**
5. Are you able to stop drinking when you want to?	**YES**	**NO**
6. Have you ever attended a meeting of Alcoholics Anonymous?	**YES**	**NO**
7. Has drinking ever created problems between you and your wife, husband, a parent, or other near relative?	**YES**	**NO**
8. Have you ever gotten into trouble at work or school because of drinking?	**YES**	**NO**
9. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?	**YES**	**NO**
10. Have you ever gone to anyone for help about your drinking?	**YES**	**NO**
11. Have you ever been in a hospital because of drinking?	**YES**	**NO**
12. Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages?	**YES**	**NO**
13. Have you ever been arrested, even for a few hours, because of other drunken behavior?	**YES**	**NO**

Source: Adapted from Selzer et al. 1975. Reprinted with permission from the *Journal of Studies on Alcohol*.

SMAST Scoring System

Each of the 13 items on the Short MAST is scored 1 (one) or 0 (zero), with questions 1, 4, and 5 scored 1 for each "no" answer, and the other items scored 1 for each "yes" answer. A score of 2 indicates possible alcoholism; a score of 3 or greater indicates probable alcoholism.

12-Step Meetings

- Alcoholics Anonymous Meetings Oahu
  - http://oahucentraloffice.com/meeting-schedule-by-day/
- Narcotics Anonymous Oahu
  - http://na-hawaii.org/meeting-schedules/
  - (na-org temp non-functional DEC 2019), and

    https://addictionresource.com/na-meetings/honolulu-hi/
- Alanon
  - http://al-anonhawaii.org/

Weekly Updates in Addictions (digest)

- http://www.asam.org/quality-practice/asam-weekly
- ASAM Weekly

- Cesar Fax: http://www.cesar.umd.edu/cesar/cesarfax.asp

Perspective

Case 1

- A 30 year-old male medical student of Japanese ancestry reports to his academic disciplinary committee that his poor performance is the outcome of dependent usage of methamphetamine.
- Historically, he was an akathisic as a child, and impulsive; he found that his late undergraduate and early graduate studies initially improved under the effects of MA.
- He relapses twice in the next 18 months, after initial treatment. He is performing much more adequately in his studies and has good clinical skills.

Resources

- http://www.integration.samhsa.gov/clinical-practice/screening-tools#drugs Multiple links to screening instruments for SUDs
- Handout on 12 Step Programs (Haning), Ries R. Et al. (Eds.), Principles of Addiction Medicine 5th Ed. 2014, ASAM
- Sadock BJ, Sadock VA, Ruiz P, Kaplan & Sadock's Synopsis of Psychiatry, 11th ed. 2014, Substance-Related Disorders, Lippincott Williams & Wilkins
- Haning WF & Guerrero APS, Ch. 19 Substance Use Disorders, in: Guerrero A & Piasecki M (Eds.), Problem-Based Behavioral Science and Psychiatry, 2008 Springer (2015 in press 2nd Ed.)
- Anon., Alcoholics Anonymous 4th Ed., 2001, AA World Services, Inc., 1st-4th Eds.
- Hales RE et al. (Eds.), The American Psychiatric Press Textbook of Psychiatry, 6th Ed., 2014, Ch.23, Substance-Related and Addictive Disorders

Directories

- **ADAD State of HawaiiWebsite - locator https://health.hawaii.gov/substance-abuse/**
- **SAMHSA Website – locator http://findtreatment.samhsa.gov/**
- **Richard Szuster, MD – HRP Resources for Residents, 586-2890**
- **Wm. Haning, MD (JABSOM, Psychiatry): faculty, optional initial contact and referral - 586-7436/220-2685 cell, haning@hawaii.edu**
- **Hawaii Program for Healthcare Professionals:** Kris Bjornson, MD, Medical Director http://www.hawaiiphp.org/ , 808-593-7444

12-Step Meetings

- Alcoholics Anonymous Meetings Oahu
- http://oahucentraloffice.com/meeting-schedule-by-day/
  - (Neighbor Islands: http://oahucentraloffice.com/meeting-schedule-by-day/big-island-maui-kuai-schedules/)
- Narcotics Anonymous Oahu
- https://na-hawaii.org/meeting-schedules/
- …and: https://addictionresource.com/na-meetings/honolulu-hi/
- Al-Anon Family Groups Hawaii
- http://al-anonhawaii.org/meeting-schedules/

Break

Chronic Illness Paradigm

- Elevated cholesterol
- High blood pressure
- Diabetes
- Arthritis
- Alcohol problems, SUDs*

*N.B., in all but SUDs, there is an assumption of on-going, lifelong care and monitoring…

Characteristics of Chronic Illness

- Late onset of clinical symptoms
- Unpredictable course
- Complex etiology
- Progressive: No cures; remissions are the therapeutic benchmark
- Treatment is behavioral (adherence & monitoring)

SUBSTANCE Use Disorders, DSM5

Criteria for Substance Use Disorder

A. A problematic pattern of substance use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

*

SUBSTANCE Use Disorders, DSM5 #1/3

Criteria for Substance Use Disorder (2 or more for Dx)

1. Substance is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control substance use
3. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
4. Craving, or a strong desire to use the substance
5. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance.

SUBSTANCE Use Disorders, DSM5 #2/3

Criteria for Substance Use Disorder

7. Important social, occupational, or recreational activities are given up or reduced because of substance use.
8. Recurrent substance use in situations in which it is physically hazardous.
9. Substance use is continued despite having knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following:
    a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect
    b. A markedly diminished effect with continued use of the same amount of the substance.

SUBSTANCE Use Disorders, DSM5 #3/3

Criteria for Substance Use Disorder

11. Withdrawal, as manifested b either of the following:
    a. The characteristic withdrawal syndrome for the substance.
    b. The substance (or a closely related substance) is taken to relieve or avoid withdrawal symptoms.

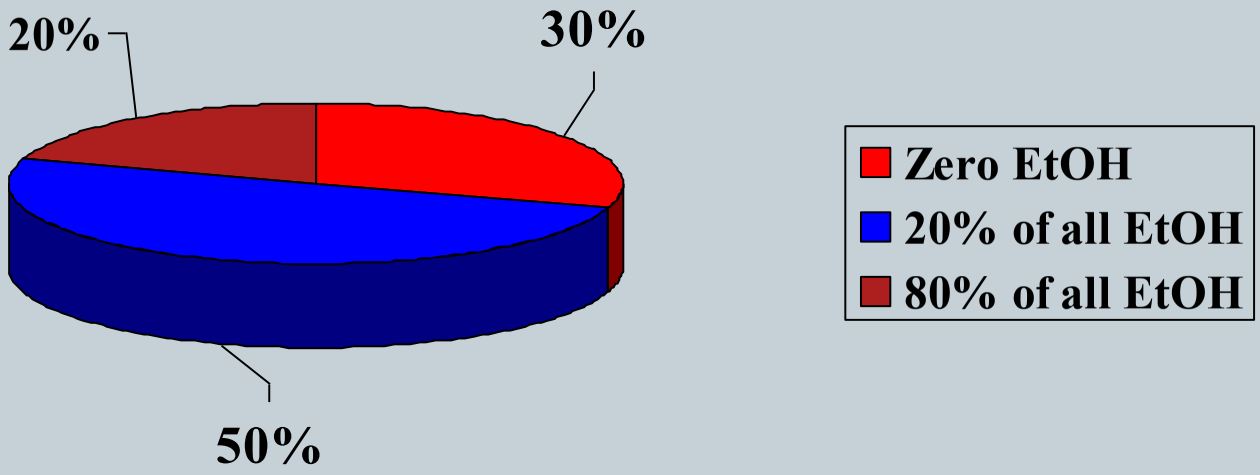
- Early remission: >3 mos., <12 mos. (no criteria other than craving/desire)
- Sustained remission: >12 mos. (no criteria other than craving/desire)

- Mild: 2-3 symptoms
- Moderate: 4-5 symptoms
- Severe: 6+ symptoms

What Level of Use Are We Discussing? NIAAA Safe Drinking Limits (<age 65)

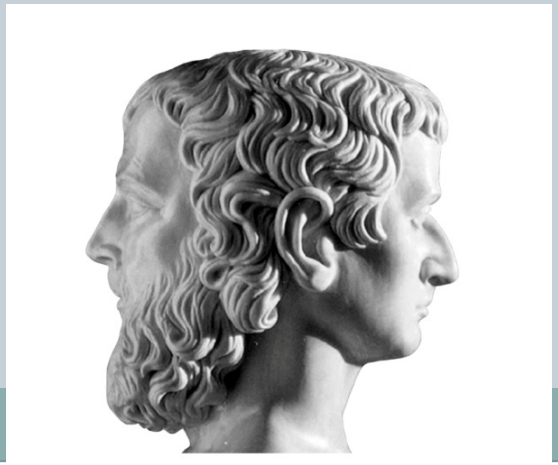
*

Alcohol Consumption Distribution, U.S.
(Mnemonic for discussion of diagnostic overlap zones)



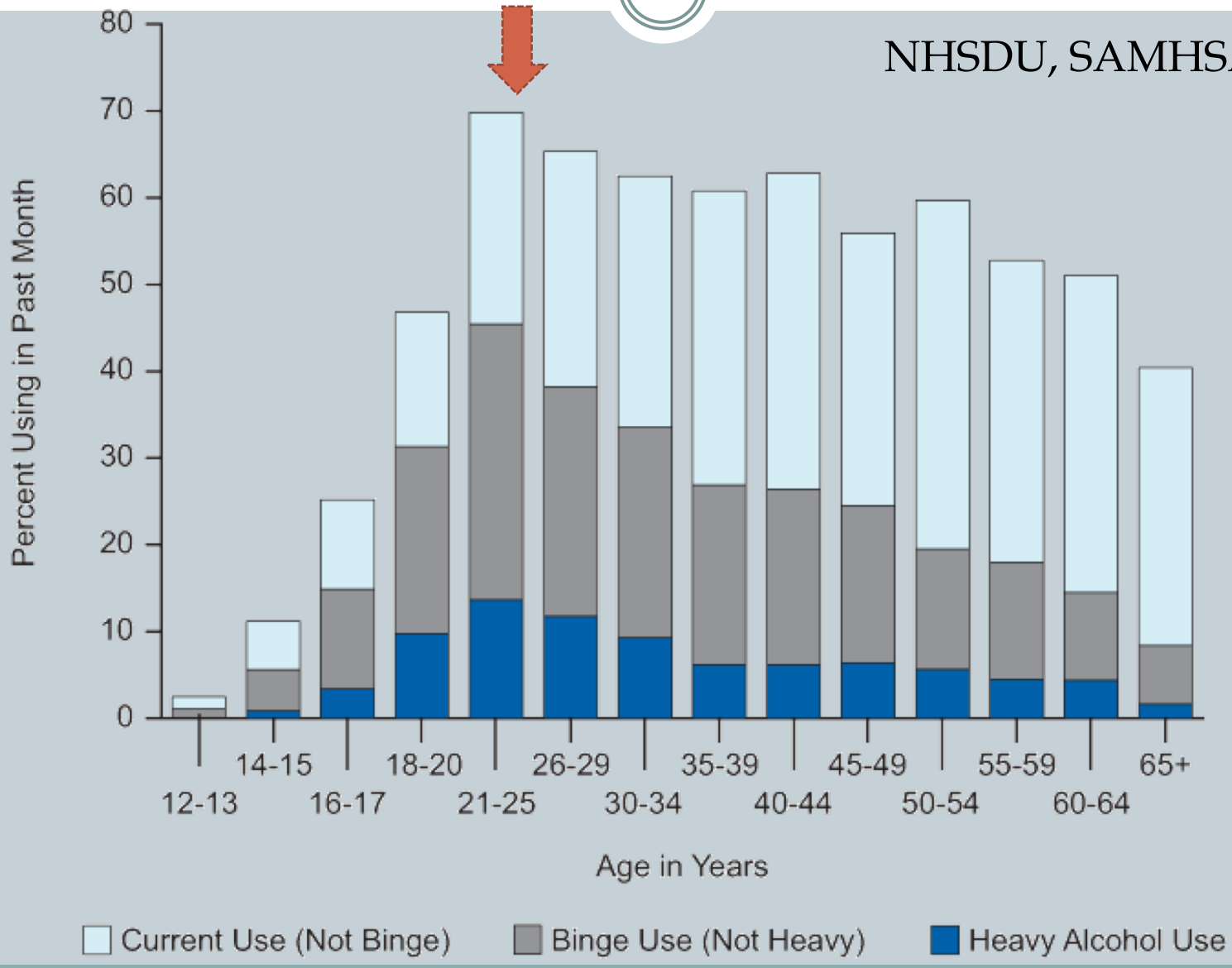
Substance Dependence (brief)

- Organization around acquisition, use, recovery from effects, of the drug
- Dosage and frequency are not the issue
- Consequences are the issue
- Adaptation and deterioration are hallmarks
- *Ambivalence* is the dominant psychodynamic



Zundap Janus

Figure 3.1 Current, Binge, and Heavy Alcohol Use among Persons Aged 12 or Older, by Age: 2011 (Moliere, *School for Scandal)*



Adolescent Developmental Injury

(to emphasize different needs of different populations, at different times)

- **Diagnostic criteria for substance use disorder are unclear for children and adolescents**
- **It almost doesn't matter, because the impact is at least as severe with both mild use and severe use, as it is for those with schizophrenia; although for different reasons**
- **Developmental difficulties arise in four major areas**
  - Friendships
  - Sex
  - Occupation
  - Family relations and independence

*

Mnemonic for disease pool and public health control, inmates in America

Medication vs. Drug

It is generally more useful to look at the locus of control, in assigning status of medicine versus "drug (of abuse)". The *illusion* of control is easily confused with autonomy. (worsened by tolerance)

Control - distortions of control, need for control, loss of control - is a central dynamic in addiction.

The ***substance*** is far less important to the disease concept than is the compulsion or drive. The disorder is ***not*** the same as the intoxication.

*

Glucose

Tryptophan

The Substances Themselves; and Treatment

Drug Classes

- Alcohol and alcohol-mimetics
  - Ethyl alcohol
  - Sedative-hypnotics
    - Benzodiazepines
    - Barbiturates
- Opioids
  - Opium derivatives: Morphine & diacetylmorpine (heroin), thebaine
  - Synthetic or semisynthetic: Meperidine, buprenorphine, oxycodone
- Hallucinogens, arylcyclohexylamines, cannabinoids, miscellany (betel, kava, etc.)
- Stimulants
  - Cocaine
  - Amphetamines (methamphetamine)

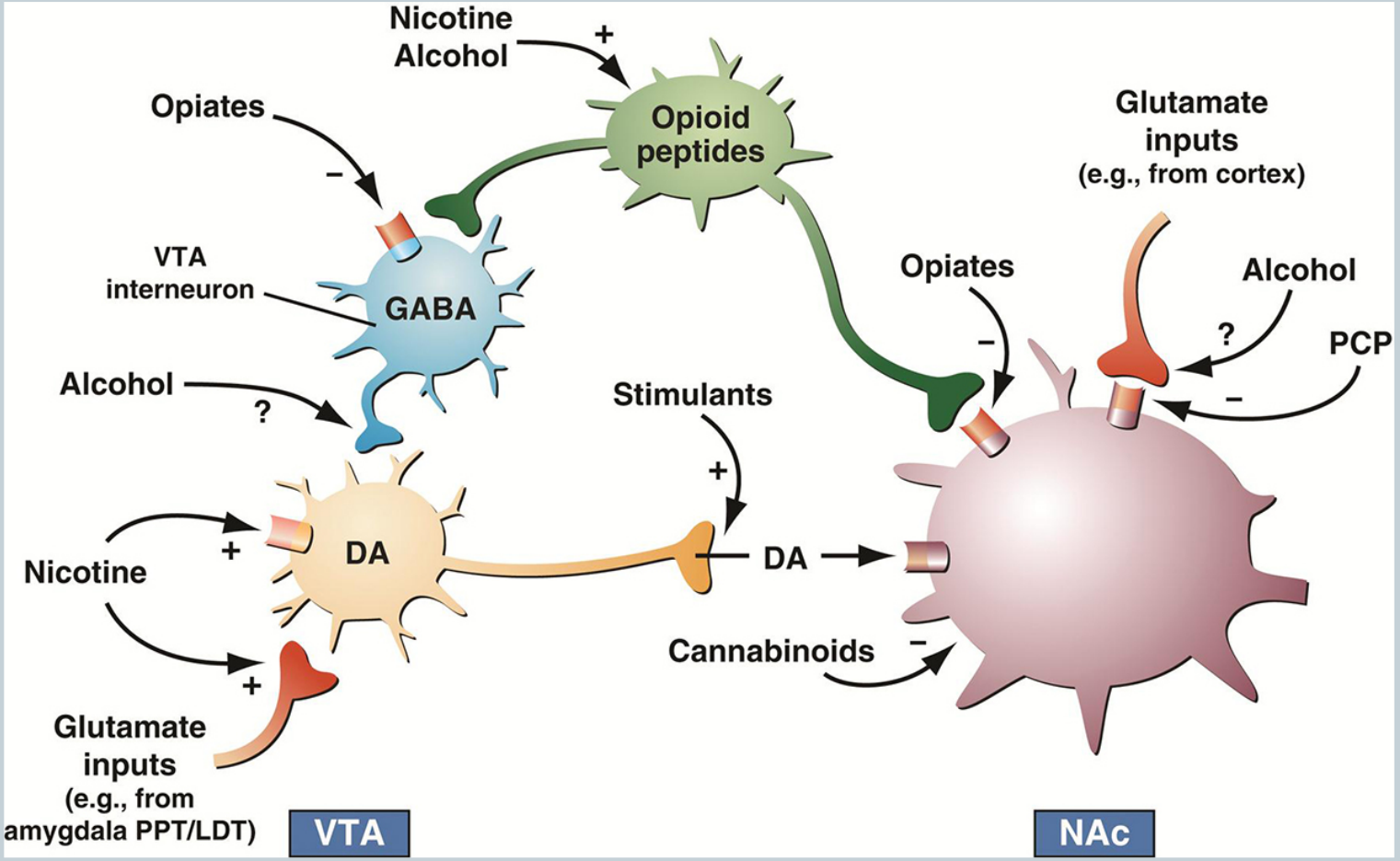
- …(and virtually every mood-altering agent: "If you can't be with the one you love, love the one you're with."

*

Alcohol and alcohol-mimetics

- Ethyl alcohol – Chloride ion channel and GABA effects
- Sedative-hypnotics – principally GABA effects
  - **Benzodiazepines**
  - **Barbiturates**
  - **Miscellany – chloral hydrate, meprobamate**

Substance Effects
(just note the 2 major anatomic players)



*

NIAAA Low-Risk/At-Risk Drinking Limits

- NIH Publication No. 10-3770
- Revised April 2010

	Men	Women
Any single DAY	</= 4 drinks	</= 3 drinks
Per WEEK	</= 14 drinks	</= 7 drinks

19% U.S. adults exceed either of these limits;
9% exceed both (total 28%)

*

Detoxification

- "Detox" (medically-assisted withdrawal) rarely alters the natural history of alcoholism
  - Hospitalized diabetic ketoacidosis
  - Successful 6-week diet
  - Discontinuation smoking for Lent
- Not to be confused with frequent short-term residential care

Benzodiazepines

- GABA-mediated chloride-ion channel in neuronal membrane
- Cross-tolerance with other sedatives (barbiturates, paraldehyde, alcohol)
- Withdrawal phenomena parallel alcohol; severity determined by potency and half-life
- In use since 1950s w/ wide therapeutic index
- Antagonist exists (flumazenil)

Zolpidem (Ambien)

- Non-benzodiazepine sedative-hypnotic, imidazopyridine
- Half-life 2 hrs., high (70%) bioavailability after first-pass
- At hypnotic doses, worsens sleep apnea
- Shortens sleep latency, lengthens total sleep
- CWUD express pharmacophilia
- Withdrawal phenomena becoming apparent with longer durations of treatment

Opioids

- Includes all classes of opiate-like agents
  - Opium derivatives: Morphine & diacetylmorpine (heroin), thebaine
  - Synthetic or semisyntheitic: Meperidine, buprenorphine, oxycodone
- Agonist effects are translated through mu, kappa, sigma, other opio-receptor sites
- Chemical composition varies between opioids; what is shared is steric configuration
- Antagonists exist (naltrexone, naloxone)
- Agonist effects:

Opioids II

- Analgesia
- Vasodilation
- Miosis
- Hypoperistalsis
- Somnolence (Morphea)
- Respiratory depression & anti-tussive activity

Cautionary note on opioids of risk

(Danger, danger, Will Robinson!)

Tramadol (Ultram)

- Cited actions are μ–receptor agonism, and reuptake blockage of norepinephrine and serotonin (site?)
  - Can be partially antagonized by naloxone
  - SEs and actions are similar to opioids
  - Still unscheduled in 2010. Package insert cautions against giving to opioid-dependents, noting that it has "been shown to reinitiate physical dependence in some patients that (sic) have been previously dependent on other opioids."
- CWUD express pharmacophilia…
- "Tramadol is most commonly abused by narcotic addicts, chronic pain patients, and health professionals." (DEA website http://www.deadiversion.usdoj.gov/drugs_concern/tramadol.htm)
- Only became controlled (Schedule IV) by DEA in 2014. Introduced in US in 1997.

Miscellany/Exotics (hallucinogenic)

- **Hallucinogens (LSD)**
- **Arylcyclohexylamines (PCP, ketamine)**
- **Cannabinoids (+ Spice)**
- **Miscellany (khat [cathinone],betel, kava, etc.)**

Cannabis/Marijuana

- Delta-9 tetrahydrocannabinol
- Hallucinogenic dissociative sedative agent
- THC available as Schedule II Rx
- Cannabinoid receptor exists; arachidonic acid derivative (anandamide) as endogenous ligand
  - High densities in cerebral cortex, cerebellum, hippocampus, striatum
- Protective factor in cannabis plant: cannabidiol/CBD

“Classic” Spice

Appearance

- Most herbal incenses appear as an olive green leafy material very similar in appearance to marijuana, oregano

“Synthetic (mimic) Cannabinoids” (K2 variants)

Why Do People Use It?

- Marijuana like effect (CB1).
- Legal in many places.
- Available online.
- Cheaper than marijuana (as cheap as $7/gram).
- Drug tests don’t pick up use.

Cannabinoid-mimic Concerns (Schedule I, DEA 2012)

Dangers of "Spice" Use

- Unknown ingredients (THC not listed), and they are always changing (based on law).
- CB1 and CB2 Receptor Affinity (Weak partial vs potent full).
- No Cannabidiol (antipsychotic and anxiolytic properties).
- No studies or safety trials.
- Addictive potential (tolerance and withdrawal).

Arylcyclohexylamines

- Family includes phencyclidine (PCP; and ketamine, "Special-K")
- Dissociative anesthetics with a propensity to hallucinosis
- Dose-dependent muscle rigidity and sensitivity to stimulation
- In ER may see catatonia, mydriasis, aggressivity
- Blocks NMDA-type glutamate receptors in cortical & limbic structures; as do σ -opiate agonists.
  ...Hallucinogenic activity is separate.

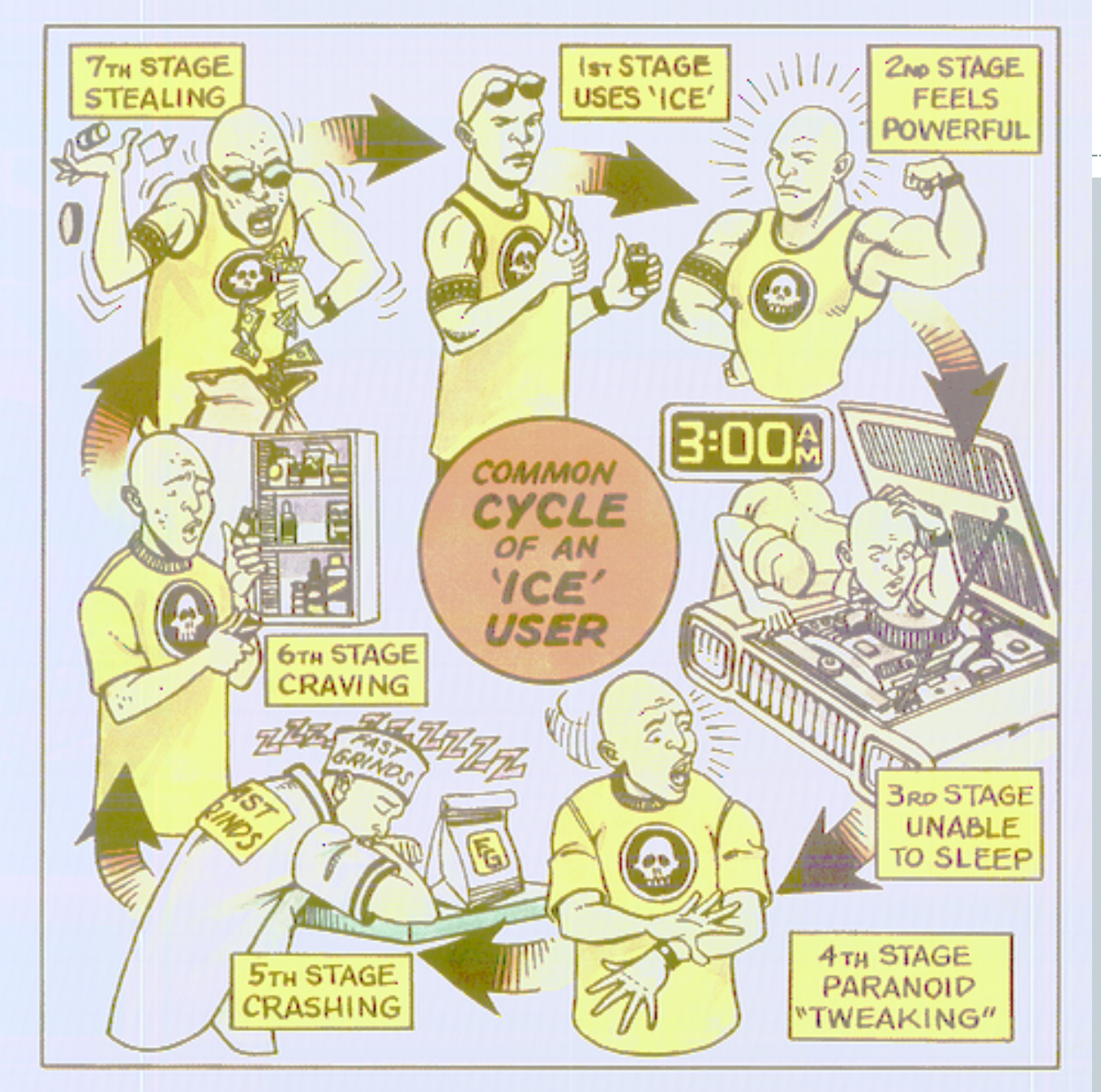
Stimulants

- **Amphetamines (DA)**
  - **Amphetamine**
  - **Methamphetamine**
- **Cocaine (DA/NE)**
- **Phentermine (DA)**
- **Methylphenidate (NE/DA)**
- **Fenfluramine (5-HT)**
- **MDMA (NE/DA/5-HT)**
- **Cathinones (MDPV) (Bath Salts, Khat) - (NE/DA/?5-HT)**

Methamphetamine

- **Ice, shabu, batu, crystal**
- **Origins: Korea, Philippines**
- **Odorless, colorless**
- **Readily synthesized, D-isomer active, +-enantiomer dominant**
- **Therapeutic Effects (Rx):**
  - **Anorectic**
  - **Focus (arguable)**
  - **Endurance**
  - **Antidepressant**
  - **ADHD**
  - **Insomniac (Antinarcoleptic/stimulant)**

Courtesy - Kamehameha Schools, 1998



Indirect Medical Complications (Methamphetamine)

- Fetal Exposure
  - Prenatal complications
  - Increased rate of prematurity
  - Small for dates
  - Altered neonatal behaviors with abnormal reflexes extreme irritability
  - Otherwise, *not known*

Secondary Complications (Meth – Adult)

- Smoked
  - Asthma/bronchitis/pneumonia
  - (Also use inhalers to enhance absorption, e.g., albuterol)
- Injected
  - Increased Hepatitis B and C transmission
  - Increased HIV transmission

Bath Salts


Made in USA
www.HeavenlySoak.com
HEAVENLY SOAK
ENERGY SOAK
500MG
Add 25-50mg to a warm bath and soak up the enjoyment!
This Heavenly Soak product is full strength and not diluted.
NOT FOR HUMAN CONSUMPTION
Do not inject, insufflate, inhale or otherwise consume.
LAB Certified
EIGHT BALLZ
Ultra Premium
NEW Formulation
Does Not Contain Mephedrone, MDPV, or Methylone
NOT FOR HUMAN CONSUMPTION
Beware of counterfeits. All Eight Ballz are sold in printed bags.
PUMP-IT!
POWDER

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Like +1 0

Hawaii legislation

GENERAL RULES:

The controlled substances in question are typically banned or scheduled on a case-by-case basis as the governments catch up with what the latest substance being used is. However, there can be complications with analog drug acts that are in force on the federal level and several states. The Federal Analog Act is a law that has serious concerns with its vague language along with the serious weakness of being limited to banning substances intended for "internal use".

Typically, there is no law for a specific license to sell bath salts, plant feeders, incense, or potpourri among the states. These goods are too prolific for effective enforcement of licenses. The common practice is to ban the substances in the goods. These can be identified by chemical tests and is a lot less burdensome than asking every general goods store to have a license for a handful of products.

Our herbal blends, bath salts and pills are completely compliant to Hawaii state laws and Federal laws and possession, sale, import, export below mentioned products is completely lawful:

Legal Products

Product Sections

- Variety Sampler Packs
- Stimulating Bath Salts Powder Blends
- AM-HI-CO Ultra Pills Legal in USA, UK and Worldwide
- Super Pills Legal in USA, UK and Worldwide
- Original Ultra Pills
- Original Super Pills
- Best Sellers
- New Products

Main Pages

- Home
- About Us
- Contact Us
- Newsletter
- Wholesale
- CHECK LAW
- Ordering Information
- Shipping Information

Shopping Cart

Items:0, Value:0

Checkout | View Cart

Cathinone base for bath salts: MDPV

Effects of MDPV

- MDPV is a powerful stimulant that functions as a dopamine-norepinephrine reuptake inhibitor (NDRI). It has stimulatory effects on the central nervioius system and cardiovascular system.
- Reportedly has 4x the potency of Ritalin and Concerta.
- Effects have a duration of roughly 3-4 hours, with after effects such as tachycardia, hypertension, and mild stimulation lasting from 6-8 hours.

Treatment Options

MEDICATIONS USEFUL IN ALCOHOL USE DISORDER

- Antabuse (Disulfram) - validated
- Opiate Antagonists (Naltrexone) - validated
- Anticonvulsants, Trazodone (withdrawal and sleep) – weakly validated
- Acamprosate – weakly validated
- Ondansetron, Topiramate – weakly validated
- SSRIs/antidepressants, antipsychotics – *unvalidated*
- Sedative-hypnotics, benzodiazepenes - ***contraindicated***

Alcohol Relapse Prevention

- Naltrexone – oral/injectable
- Disulfiram
- Acamprosate

Investigational or dismissed as ineffective

- Serotonin reuptake inhibition
- Buspirone
- Tricyclic antidepressants

*

Alcohol Relapse Prevention
Disulfiram

- Aversive with alcohol use: vomit, hypotension
- Inhibits acetaldehyde breakdown
- Problems with compliance
- Contraindications: liver failure, psychosis
- Useful for highly-cued individuals with AUD (e.g., on airplanes) [risks of the 1K traveller…]

Alcohol Relapse Prevention
Naltrexone

- Mechanism: anti-craving, block priming effect
- Decrease positive effect
- No aversive effect if alcohol used
- Daily oral dose of 50 mg or monthly injection ($600+)
- Duration - 6 to 12 months
- Contraindications: opioid dependence
  severe liver disease
- Side effects (5-10%): nausea, headache

Risks vs. Benefits for Naltrexone in Alcoholism

Risks

- ✓ 6-10% initial dropout due to vomiting, nausea, and anxiety, which does not persist after discontinuation

Benefits

- ✓ Approximately 30-40% reduction of relapse risk
- ✓ Markedly improved with depot administration (injection)
- ✓ Improved ratings of employment problems
- ✓ Benefits for preventing relapse persist for six months after discontinuation
- ✓ Improved abstinence rates at endpoint and follow-up

Acamprosate

- Multicenter studies, Europe, principally focusing on females, *Sass et al. 1996*. 3000+ pts.
- Structural analogue of homocysteic acid which interacts with excitatory amino acid neurotransmitters (glutamate)
- Modestly significant increase in abstinence days (20+% vs. 11% abstinent at one year), but type-specific: Alcoholism, exclusive of those with organicity and those with "self-medication" profiles
- U.S. trials underway in 1999, authorized use 2003
- Unimpressive outcome; but "can't hurt," no adverse interactions.

Opioid Agonist Therapies

- Methadone
  - Analgesic, mu-agonist
  - Dole & Nyswander 1964
  - Highly-protein bound, long half-life
  - Daily dosing
  - Formidable risks but manageable
- Buprenorphine
  - Analgesic, partial mu-agonist (mixed agonist-antagonist)
  - 2001 available for detox/maintenance
  - Daily dosing
  - Lower risk
  - Restricted range: won't substitute well for highest doses of methadone, some other opioids

Substance Dependence - Other Therapies

- **Staged therapy using ASAM Criteria**
  - Residential programs
  - Outpatient programs

  …Individual, group, milieu therapies
- **Community-based mutual recovery programs** (AA, NA, DRA)
- Miscellaneous controlled use or harm-reduction approaches (e.g., Rational Recovery, Alcoholics Victorious)

ANTABUSE (disulfiram)

Causes Intentional Adverse Symptoms:

ADH ALDH

ETOH ←→ Acetaldehyde ←X→ Acetate

Nausea, flushing, headache, hyperperistalsis, hypotension, hyperemesis, collapse

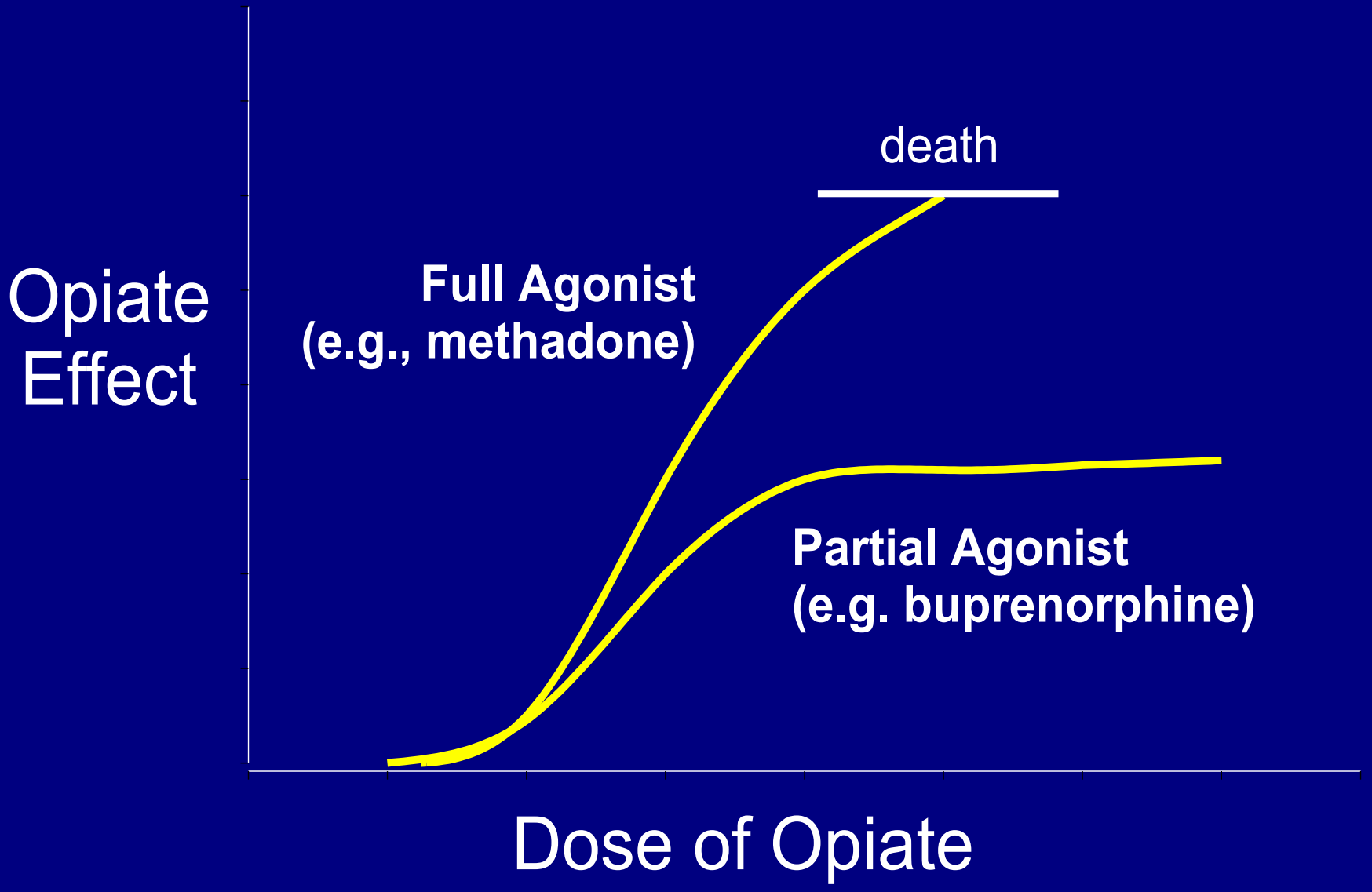
Naltrexone (Revia/Vivitrol)

FDA Approved For Treatment of Alcohol Dependence 1994.

Mechanism of Action: Opiate Antagonist

- Blocks linkage between Alcohol and endogenous
- Opiate system and decreases positive, reinforcing effects of Alcohol
- Can be used to initiate abstinence or decreases use as well as prevent relapse. Safe to take if patient relapses to Alcohol use.
- Reduces Cue-Induced Craving for Alcohol
- May be more effective in patients with early initiation of alcohol use and strong family history

Partial vs Full Opiate Mu Agonist



Buprenorphine: Advantages over Methadone

1. Not encumbered by regulatory structure of methadone dispensing
2. Better safety profile in overdose
3. Minimal subjective effects (e.g., sedation) following a dose
4. Lower level of physical dependence
5. It's not methadone (better press…)

Buprenorphine: Disadvantages

- Will not adequately meet need of patients requiring higher-dose methadone (e.g., >120 mg/day)
- Greater Medication Cost
- Minimal subjective effects (e.g., sedation) following a dose*
- Lower level of physical dependence (i.e. patients can discontinue treatment)*
- Not detectable in routine urine toxicology screening

Methadone

Marie Nyswander, 1919–1986

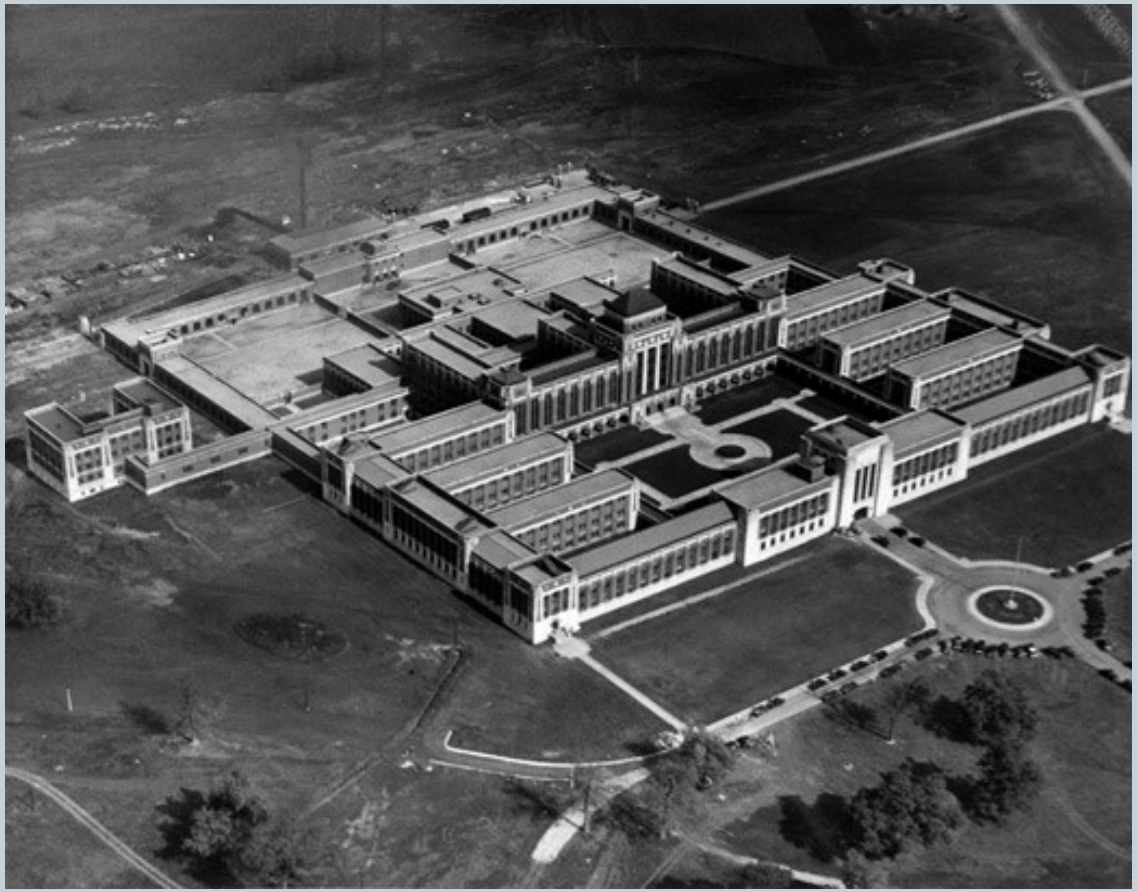
FDA Approved 1973 (detox and maintenance)

Long-acting opiate, full agonist at mu receptor (Dole & Nyswander)

- ~200,000 actively in treatment
- Good evidence of efficacy in reducing and stopping Opiate use at "blocking dose" (usually 80-120mg daily)
- Good evidence of long term safety
- Needs to be dosed/dispensed in Methadone clinic (MMTP)
- Side effects of sedation, sleep disturbance, danger of overdose and combination with other drugs, especially sedative-hypnotics
- Not effective in reducing or stopping abuse of other drugs

Lexington Federal Hospital 1930

(currently under Federal Bureau of Prisons)



Cannabis and OUD

- A disturbing trend of states' legislative approvals of the use of *cannabis* for treatment of OUD reflects a mood of desperation in opioid use disorder (OUD) management that is leading to unwise policy. Such policy implements treatment of a disabling and potentially lethal disorder with an unvalidated substance. In a presentation to the California Society of Addiction Medicine this past August, I was asked to address the evidence for treatment of OUD with *cannabis*.
- The 16 citations most commonly presented in defense of this practice allude to adjunctive management of pain, or to antinociceptive effects in humans or rats.
- Some are encouraging in offering support for *cannabis* derivatives as antinociceptive (analgesic) agents, primary or adjunctive. However, no citation provided more than speculation regarding the utility of *cannabis* in management of opioid use disorder (OUD), or in management of addiction *per se*.
- An additional 152 items were reviewed from NLM in seeking evidentiary support for the contention that cannabis is justified in management of OUD; the review was unproductive of such support.
- My conclusion was that research which determines both the safety and efficacy of the component chemicals within *cannabis* warrants pursuit. In the absence of adequate studies supporting use, however, legislative authorization of *cannabis* use for management of an OUD, including withdrawal, could constitute uncontrolled and unregulated human research.

Non-Pharmacological approaches to Substance Use Disorder

- - Therapies:

  Group, Milieu, Interpersonal/Individual

  CBT, MI/ME, TSF
- - Mutual Assistance: 12-Step (Project Match) and non-12-Step conclaves (Smart Recovery, Moderation Management, SOS)
- - Settings: Hospital, Residential, ST/LT (e.g. therapeutic communities), IOP, OP – ASAM Criteria (Mee-Lee et. al) provide algorithm

Robert Smith, MD & Bill Wilson

AA 12 Steps (go to next slide)

- **THE STEPS:**
- 1. We admitted that we were powerless over alcohol - that our lives had become unmanageable.
- 2. Came to believe that a Power greater than ourselves could restore us to sanity.
- 3. Made a decision to turn our will and our lives over to the care of God 'as we understood him.'
- 4. Made a searching and fearless moral inventory of ourselves.
- 5. Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
- 6. Were entirely ready to have God remove all these defects of character.
- 7. Humbly asked Him to remove our shortcomings.
- 8. Made a list of all persons we had harmed, and became willing to make amends to them all.
- 9. Made direct amends to such people wherever possible, except when to do so would injure them or others.
- 10. Continued to take personal inventory and when we were wrong promptly admitted it.
- 11. Sought through prayer and meditation to improve our conscious contact with God 'as we understood him', praying only for knowledge of his will for us and the power to carry that out.
- 12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs.

Abbreviated Steps

- These steps are largely unchanged from program to program, with substitutions of "drugs" or a particular compulsion for "alcohol", "addict" or the particular compulsive for "alcoholic". I find that their intents may be summarized as follows:
- 1. Concession of defeat
- 2. Acknowledgment of a source of help
- 3. Surrender to the source of help
- 4. Inventory
- 5. Confession
- 6. Preparation for changes
- 7. Petition for changes
- 8. List of the injured
- 9. Restitution to the injured
- 10. Periodic inspection & correction
- 11. Seeking of instructions
- 12. Following and transmitting instructions
-
- And even more tersely:
- Surrender, Hope, Trust, Inventory, Confession, Readiness, Petition, Butcher's Bill, Payment, Maintenance, Communion, Action & Aid.

Naloxone (digression)

- …But as long as we're talking about opioid-blockers, and because this is very important, let's take a quick tangent onto naloxone, essentially the short-acting, injectable analog of naltrexone – and its use in overdose resuscitation.

Resuscitation in Opioid Intoxication & Arrest

- NY State Working-Group on Resuscitation 2016
- https://www.health.ny.gov/diseases/aids/general/opioid_overdose_prevention/docs/resuscitation_training.pdf
- "The most recent American Heart Association (AHA) guidelines prioritize chest compressions and defibrillation for cardiac arrest. Rescue ventilation is part of CPR algorithms designed for professional first responders and health care workers, but CPR training for community responders does not include rescue ventilation anymore."
- The issue of chest compressions, rescue breathing, or both is rendered relatively moot in a setting such as Honolulu, where first responder time is commonly 4-8 minutes. Neighbor island experience argues for combined approach, but most lay persons are reluctant to perform rescue breathing.
- All first responder units (Fire, EMS, Water Safety; increasingly PDs) in Hawaii carry naloxone.
- **The naloxone can't circulate if the heart is not pumping.**

Nicotine Dependence

Nicotine Replacement Therapies (NRT): gum, patch, spray

- Increase quit rates 1.5 – 2x
- Meds + therapy = 15-30% quit rate
- Can combine passive and active NRT
- Duration of therapy – 8-12 weeks
- Effects of meds wane over time
- Vaping is *not* a validated approach

Non-Nicotine Replacement Therapy (NNRT)

- Bupropion (Welbutrin) – mixed antidepressant, MOA unknown
- Varenicline (Chantix) – nicotine partial agonist

Generations 1

Generations 2