

NYSSCSW MET CHAPTER ADDICTIONS COMMITTEE
UNDERSTANDING & TREATING ADDICTIONS
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I. UNDERSTANDING ADDICTION

- Use – Abuse – Addiction
- Criteria for Diagnosis of Addiction
- Disease concept of Addiction
- Genetics of Alcoholism (NIAAA)
- Environmental Impact on Addiction
- www.youtube.com *Addiction: Laura Ragle* (1 hr, 15 min)
- www.youtube.com Addiction as a brain disease video, Dr. Ruth Potes

II. DRUGS OF ABUSE

- Drug Classification (CNS Depressants, Stimulants, Hallucinogens, Cannabis, Inhalants)
- Drug Effects & Withdrawal
- Alcohol Effects on the Brain
- Cocaine: Euphoria & Depression

III. Treatment of Substance Abusers

- Crisis of bottoming out
- Attachment issues and early recovery
- Treatment techniques in early, middle, and on-going recovery
- Medication-Managed Treatment
- www.youtube.com, The Making of an Alcoholic + Barely Surviving Alcoholism: The Amazing Story of Elizabeth Vargas, ABC 2020

IV. 12 Step Programs as a Treatment Modality

- Attend 12 Step Meeting
- 12 Steps of AA and Ego Functioning
- Issues of separation/individuation

Registration Fee: \$25 Online at: www.NYSSCSW.org/Addiction

Dates: November 12, 19, Dec 3, Dec 10

Time: 6:30 – 8:00 pm

Location: Elizabeth Ojakian's Office

51 Fifth Avenue

Suite 1-AD

New York, NY 10003

**** Space is limited so first come first serve will be honored.**

ATTACHED IS THE HANDOUT FOR THE FIRST SESSION

UNDERSTANDING ADDICTION

Session 1

PATTERN OF DRINKING: Moderate is one or fewer drinks per day for a woman and two or fewer per day for a man and for those over 65 no more than one per day (NIAAA). AUDIT (Alcohol Use Disorders Identification Test) identifies hazardous drinking as 21 drinks per week in men (or 7+ on one occasion at least 3X week in men and for women it is 14+ drinks per week (or 5+ drinks on one occasion at least 3X week). The Audit Questionnaire comes in multiple languages online at auditscreen.org.

Alcohol is metabolized at about one ounce of pure alcohol an hour. Once in the bloodstream it is carried throughout the body and travels to the brain. A woman who weighs 150 pounds will reach a BAC of .08 (intoxication for the legal limit for driving) if she has three drinks in one hour or five drinks in four hours. If use amphetamines with alcohol, one may not feel the effects of alcohol until the amphetamine effect wears off, and then suddenly be in an intoxicated state. Alcohol is detectable in the blood for six hours, 12 to 24 hours in the breath, urine, and saliva, and 90 days in the hair. www.alcoholhelpcenter.net BAC Calculator.

CRITERIA FOR DIAGNOSIS OF SUBSTANCE ABUSE PROBLEMS (mild, moderate, severe)

The drug assumes **MAJOR IMPORTANCE** in one's life. The person would rather get high than socialize with friends or engage in other leisure time activities.

Drug use is **CONTINUED DESPITE NEGATIVE CONSEQUENCES:** marital, family or interpersonal problems (threatened divorce, problems with children). Job problems: absenteeism, lateness, decreased productivity, accidents, risky behavior. Financial problems such as spending money for drugs rather than necessities, using up savings, borrowing money. Health problems such as pancreatitis, liver disease, heart problems. Legal problems (DWI, fights, stealing).

Drug use is **COMPULSIVE AND OUT OF CONTROL.** The person repeatedly uses more of the drug than he/she intends (plan to stop at bar for couple a drink and leave after five), return to drug use despite intentions and promises not to.

INABILITY TO ABSTAIN: Person may stop or limit drug use for a period of time but can never predict or determine when problematic use will return.

ABUSE: At this stage the substance has *assumed a major role in one's life and beginning of life problems.* A person feels they must use in order to have a good time (socializing, sex, etc).

- Associates with people who use drugs for the intention of using drugs more than to be with the people themselves (prefers to go to parties where cocaine will be available or date a person who will provide cocaine for their use).
- Regular use. The pattern of life has become one of periodic intoxication.
- Risky or hazardous behavior, use of substance has caused some negative consequences.
- Family or friends complain about the drug use (marital problems).
- Engages in behavior they would not have otherwise (fights, sexual, criminal, DWI).

- Job suffers - due to hangovers work is missed or arrives late. Effects productivity and quality of one's work.
- Finances suffer - (money to drugs and behind on bills).
- Loss of control - becomes intoxicated when did not intend to on several occasions.

ADDICTION (exacerbation of abuse symptoms)

MAJOR IMPORTANCE: Life Begins to Revolve Around the Drug

- Isolates from former friends and family as they disapprove of his/her drinking.
- Social life consists of drinking alone in home, at the bar or with others on the street corner.

CONTINUED USE IN THE FACE OF NEGATIVE CONSEQUENCES

- Continue drinking with enlarged liver (*health*)
- Continue using cocaine despite threat of eviction (*financial*)
- Continue to use despite loss of family through divorce (*family*)
- Continue to use despite threat of loss of job (*job*)

OUT OF CONTROL (craving dominates)

- Repeatedly get drunk/use drugs when one did not intend to
- Spend paycheck on heroin despite intentions not to do so
- Go on a cocaine binge with rent and food money

INABILITY TO ABSTAIN (COMPULSIVE)

- Unable to limit drinking, drugging.
- Quit for a period of time but return to problem use.

DSM-V: ALCOHOL USE DISORDER – A problematic pattern of alcohol use leading to clinically significant impairment or distress as manifested by at least two to the following occurring within a 12-month period:

- Mild: Presence of 2-3 symptoms
- Moderate: Presence of 4-5 symptoms
- Severe: Presence of 5+ symptoms

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

1. Alcohol 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 alcohol use.

3. A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.
4. Craving, or a strong desire or urge to use alcohol.
5. Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.
7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
8. Recurrent alcohol use in situations in which it is physically hazardous.
9. Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
10. Tolerance, as defined by either of the following.
 - a. A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.
 - b. A markedly diminished effect with continued use of the same amount of alcohol.
11. Withdrawal as manifested by either of the following.
 - a. Presence of the characteristic withdrawal syndrome for alcohol.
 - b. Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms. DSM-V, page 490-491.

DSM-V: All drugs have mild with one diagnosis and moderate & severe with the same.

Alcohol Use Disorder

- Mild F10.10
- Moderate F10.20
- Severe F10.20

Cannabis Use Disorder

- Mild F12.10
- Moderate F12.20
- Severe F12.20

DISEASE DEFINITION: “A condition of the living animal or plant body or one of its parts that impairs normal functioning and is typically manifested by distinguishing signs and symptoms” (Merriam Webster).

Diabetes, hypertension, asthma, cancer, and addiction are all diseases that cause changes in the way the brain and body functions and are caused by a combination of **BEHAVIORAL, ENVIRONMENTAL, AND BIOLOGICAL FACTORS**. Weight of each may vary per individual on disease etiology: poor diet, sedentary life style, sun exposure, smoker, pollution, chemical exposure at work, social environment, and genetic predisposition.

Relapse rates are as follows: Drug addiction 40-60%, Type II diabetes 30-50%, hypertension 50-70%, and asthma 40-70% (www.integration.samhsa.gov).

Research has found there appears to be a common biological pathway (50%) to addiction, regardless of the drug (NIDA, www.drugabuse.gov). All drugs taken in excess activate the brain reward system and acts as a reinforcer of behavior. Gambling can similarly activate the reward system. Sex, exercise, and shopping are not included in the DSM-V as an addiction as there is insufficient research to do so (are considered behavioral addictions).

Brain Reward Center (limbic System in mid brain): regulates the ability to feel pleasure activated by sex, food, nurturing, drugs of abuse. Drugs can cause **2-10X THE AMOUNT OF DOPAMINE AS NATURAL REWARDS** (sex, food) – difference between a whisper and a shout. Drugs can flood the brain with dopamine (+ other neurotransmitters) that causes intense pleasure. **THE BRAIN ADJUSTS TO SUCH A FLOODING BY PRODUCING LESS DOPAMINE OR REDUCING THE NUMBER OF RECEPTORS THAT CAN RECEIVE DOPAMINE SIGNALS > RESULTS IN DECREASE IN ABILITY TO EXPERIENCE PLEASURE.** Brain has been changed (stops dopamine production & take away receptors for dopamine to bind with – dopamine needs a receptor to be effective).



Normal Brain

Drug Addicted Brain (decreased dopamine)

The addicted brain will not be able to feel pleasure and may *try to feel normal* by drug use but overtime even pleasure from drugs may not happen, or at least be reduced + experience strong cravings from prior experience. Once the brain changes, willpower becomes impaired. **BEHAVIORAL EFFECTS OF BRAIN CHANGES: INCREASED DRUG CRAVING AND REPEATED RELAPSES.**

Opioid drugs, alcohol, cocaine, and nicotine all cause the increase of dopamine (a brain chemical responsible for pleasure) which activates the reward pathway in the brain. Dopamine teaches the brain to repeat pleasurable behaviors (sex, food, nurturing, drugs) – is **reinforcing/rewarding**. **Heroin can cause the body to release as much as 10X the average amount of dopamine.**

BRAIN DISEASE MODEL OF ADDICTION: Genetic and environmental factors cause physical changes to the brain (structure and function) with three primary symptoms:

- Desensitization of the reward circuits of the brain (need more drug to get effect). Tolerance.
- Cellular adaptation: Flooding the brain with drug-induced dopamine causes the brain to *reduce the number of dopamine receptors it produces* to try to compensate, which increases the need for drug-induced release of dopamine which further causes brain to reduce dopamine receptors.....
- Increased *conditioned responses* related to the substance an individual is dependent on.
- *Declining function of brain regions that facilitate decision making and self-regulation.*
Volkow, N.D. Koos, McLellan. (2016). *Neurobiologic advances from the brain disease model of addictions*. The New England Journal of Medicine. 374(4)363-371. Nora Volkow is director of NIDA.

Different drugs have different chemical effects on the brain, but the neurotransmitter dopamine plays a large role in addiction. A flood of dopamine released by drugs/alcohol is what gives the high or reward. **Dopamine D2 receptors in the striatum are responsible for what motivates a person to forego instant**

gratification for more challenging and long-term rewards. With fewer D2 receptors in the striatum the person will express a **need for immediate gratification, compulsivity, and propensity for short-term rewarding behavior**. Some people have a genetic propensity for fewer D2 dopamine receptors. Decreased dopamine D2 receptors also caused by alcohol and drug abuse as the brain tries to regulate the dopamine level by reducing dopamine receptors. This then prompts the need for more of the drug to get high, which continues the erosion of dopamine D2 receptors availability, which then **makes for more impulsivity and drug taking**. Addicts with higher number of D2 receptors tend to do better in non-managed medical treatment Research Update, "Drug Abuse, Dopamine and the brain's reward system.

Physical changes caused by repeated exposure to rewarding stimuli strengthen the dependence by **deteriorating brain function critical to self-regulation and motivation** to remain abstinent, even in the face of negative consequences. Heredity can make an individual more vulnerable to a rewarding stimulus (i.e. may respond more positively).

Genetic component of alcoholism put at 50-60% (National Institute on Alcohol Abuse and Alcoholism, July 2003). Those predisposed may respond differently (more positive/profound experience) than those without the genetic predisposition. Chance of developing alcoholism is 3-4X higher if have close relatives with this disorder; 3-4X greater chance of developing alcoholism than one's adoptive family if adopted at birth by non-alcoholic parents but had a biological alcoholic parent (DSM-V).

Researchers feel that certain genetic factors increase the risk for both alcohol and drug dependency and the overlap between both are due, at least in part, to shared genetic factors. Heritability estimates for illicit drugs is estimated between 45-79%. *Endogenous opioids are molecules that are naturally produced in the body that have similar effects as the opioid drugs*. The endogenous opioid system has been implicated in contributing to the reinforcing effects of several drugs of abuse, including alcohol, opioids, and cocaine. This is supported by the finding that naltrexone, which is an opioid antagonist has been found effective in reducing the amount of alcohol consumed by some people. Dick, Danielle, et al. (2008). *The Genetics of Alcohol and Other Drug Dependence*. Alcohol Research & Health, 31 (2), 111- 118.

The hypothesis of the brain disease model of addiction is that **brain cells adapt to introduction of drugs/alcohol and this disrupts critical pathways in the brain that impairs one's ability to control drug seeking behavior (cellular adaptation >disease)**. The person loses his/her braking or turn off mechanism. **Brain is fundamentally altered and person may be unable to experience normal reward states without drugs. Cells in the liver and brain change in order to tolerate larger quantities of the chemical.**

Can see brain changes on various tests; some disappear with sobriety and some do not and persist over a lifetime. Changes in cells, within brain circuitry, with functioning of the brain. Cognitive deficits, memory loss and function due to toxicity - can see brain shrinkage in alcoholics, chronic cravings (hungry opioid cells > methadone). Withdrawal is a sign that the brain has adapted to the drug and symptoms can dissipate or remain.

Genetic Studies

Twin Studies:

Identical twins had a 54% concordance rate for alcoholism, compared to **28% for fraternal** twins and the more severe the alcoholism in the first twin, the higher the concordance rate. Sample of 174 male twins pairs with at least one of who was alcoholic. Kaij, L. (1960). Alcoholism in Twins. Sweden: Almqvist & Wiksell.

Adoption Studies:

Sample included infants adopted before 6 weeks of age and at the time of the study and were between the ages of 25-29. Both groups were from similar socioeconomic strata and raised in similar environments. **20%** of those with a biologic alcoholic parent became alcoholic vs. **5%** of those without a biologic alcoholic

parent (Denmark, 55 with a biologic alcoholic parent and 55 without). Goodwin, D.W. (1973). *Alcohol problems in adoptees raised apart from alcoholic biological parents.* Arch Gen Psychiatry, 28:238-243.

Family Studies: Sons of alcoholics are at least 3X more likely to become alcoholic than sons of non-alcoholic fathers. Daughters of alcoholic mothers are 2X more likely to become alcoholics. Some studies have found sons of alcoholic as much as 4X more likely to become alcoholic. Schuckit, M.A. (1981). *The genetics of alcoholism.* Alcoholism: Clinical and Experimental Research, 5, 439-440.

Biochemical Studies:

Sons (late teens/early 20’s) with alcoholism in a first degree relative showed fewer subjective feelings of intoxication after three drinks and showed less decrement in tests of psychomotor and cognitive performance. This lessened sense of intoxication resulted in a **lack of warning** of impending intoxication before it occurred. At high levels the subjects were almost as intoxicated as the control (non-biological group). Subjects lacked a subjective warning signal or a turn off mechanism. Schuckit, M.A. (1984). *Subjective responses to alcohol in sons of alcoholics and controls.* Arch Gen Psychiatry, 41:879-884.

Sons (age 11-13) of alcoholics showed high frequency EEG activity (fast EEG activity is an *inheritable characteristic and is frequently found in adult alcoholics*). *Alcohol is known to slow brain activity, therefore alcoholics may be persons who learn to reduce genetically determined fast brain wave by self-medication with alcohol* (i.e. they would be more vulnerable to alcohol’s effect). Schuckit, M.A. (1984). *Subjective responses to alcohol in sons of alcoholics and controls.* Arch Gen Psychiatry, 41:879-884.

Animal Studies

Mating a strain of heavy drinking mice and a non-drinking strain will result in offspring that are intermediate in alcohol intake. Meisch, R.A. (1982). *Animal studies of alcohol intake.* British Journal of Psychiatry, 141:111-120.

Monkeys, who do not naturally prefer alcohol to water can be made to consume large quantities of alcohol and have this preference become irreversible by **manipulating the biochemical levels of dopamine** and dopaldehyde in the brain. Myers, R.D (1978). *Psychopharmacology of Alcohol.* Annual Review of Pharmacology and Toxicology. 18:125-144.

	Nicotine	Alcohol	Cocaine	Cannabis
Use Onset to Dependence after a Year	2%	2%	7.1%	2%
“ “ “ after a Decade	15.6%	11.0%	14.8%	5.9%
“ “ “ in a Lifetime	67.5%	22.7%	20.9%	8.9%

Other studies have found that one-third to one-half of daily nicotine smokers develop nicotine dependence at some point in their lives. Within a decade of use 12-13% develop alcohol dependence, 15-16% cocaine dependence, and 8% cannabis dependence.

There appears to be a switch which signals the change of abuse to addiction (therefore a brain disease). Some people drug/drink alcoholically (blackouts, excessive use, loss of control) from the beginning and some take years to get to this point.

- **Early Stage:** Increased use and tolerance but few observable problems.
- **Middle Stage:** Progressive loss of control. No longer able to use the same quantities without becoming intoxicated or creating problems (job, health marriage, legal).

- *Chronic Stage:* Deterioration of bio-psycho-social health. Activities that interfere with using or drinking are given up. Break promises, forget commitments, lie, isolate & life consumed by the need to use.

Relapsing disease: Some alcoholics stop for a while, but return or switch to an alternate type (whiskey>beer) in an unsuccessful attempt to control their addiction. A return to old drug haunts or people is likely to precipitate a craving and relapse (people – places – things). Typically a person may have a *number of relapses before becoming sober* (recovering).

Chinese Proverb: First a person takes a drink (free will) and then the drink takes a person (lost free will, craving, inability to control). Cucumber > Pickle and can't turn back.

www.youtube.com *Addiction: Laura Ragle* (1 hr, 15 min)

www.youtube.com *Addiction as a brain disease video, Dr. Ruth Potww*

