ADDICTION

THE NEUROBIOLOGY OF ADDICTION

Simply put:

> Addiction is a condition that results when a person ingests a substance (e.g., alcohol, cocaine, nicotine) or engages in an activity (e.g., gambling, sex, shopping) that can be pleasurable but the continuation of which becomes compulsive and interferes with ordinary responsibilities and concerns, such as work, relationships, or health. People who have developed an addiction may not be aware that their behavior is out of control and causing problems for themselves and others.[1]

Addiction Defined as an Illness/Disease by ASAM-Medical Model:

> Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors."
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> Addiction is characterized by the inability to consistently abstain from mood altering substances, impairment in behavioral control, craving (a programmed response to environmental signals that have been connected to drug use through experience), diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.
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> Although some believe that the difference between those who have addiction and those who do not is the quantity or frequency of alcohol/drug use, engagement in addictive behaviors (such as gambling or spending), or exposure to other external rewards (such as food or sex), a characteristic aspect of addiction is the qualitative *way* in which the individual responds to such exposures, stressors and environmental cues. A particularly pathological aspect of the *way* that persons with addiction pursue substance use or external rewards is that preoccupation with, obsession with and/or pursuit of rewards (e.g., alcohol and other drug use) persist despite the accumulation of adverse consequences. These manifestations can occur compulsively or impulsively, as a reflection of impaired control.
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> Persistent risk and/or recurrence of relapse after periods of abstinence is another fundamental feature of addiction. This can be triggered by exposure to rewarding substances and behaviors, by exposure to environmental cues to use, and by exposure to emotional stressors that trigger heightened activity in brain stress circuits.
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> In addiction there is a significant impairment in executive functioning, which manifests in problems with perception, learning, impulse control, compulsivity, and judgment. People with addictions show a lower readiness to change dysfunctional behaviors despite concerns expressed by significant others and display an apparent lack of appreciation of the magnitude of cumulative problems and complications. The profound drive or craving to use substances or engage in apparently rewarding behaviors which is seen in many patients with addiction, underscores the compulsive or avolitional aspect of this disease. This is the connection with "powerlessness" over addiction and "unmanageability" of life, as is described in Step 1 of 12 Step programs.

[1]What is addiction? Retrieved on July 13, 2017 https://www.psychologytoday.com/basics/addiction

Addiction Defined as an Illness/Disease by ASAM-Medical Model (cont'd.)

Behavioral manifestations and complications of addiction, primarily due to impaired control, can include:

- Excessive use and/or engagement in addictive behaviors, at higher frequencies and/or quantities than the person intended, often associated with a persistent desire for and unsuccessful attempts at, behavioral control.
- Excessive time lost in substance use or recovering from the effects of substance use and/or engagement in addictive behaviors, with significant adverse impact on social and occupational functioning (e.g., the development of interpersonal relationship problems or the neglect of responsibilities at home, school or work).
- Continued use and/or engagement in addictive behaviors, despite the presence of persistent or recurrent physical or psychological problems which may have been caused or exacerbated by substance use and/or related addictive behaviors.
- A narrowing of the behavioral repertoire focusing on rewards that are part of addiction.
- An apparent lack of ability and/or readiness to take consistent, ameliorative action despite recognition of problems.

Cognitive changes in addiction can include:

- Preoccupation with substance use;
- Altered evaluations of the relative benefits and detriments associated with drugs or rewarding behaviors; and
- The inaccurate belief that problems experienced in one's life are attributable to other causes rather than being a predictable consequence of addiction.

Emotional changes in addiction can include:

- Increased anxiety, dysphoria and emotional pain;
- Increased sensitivity to stressors associated with the recruitment of brain stress systems, such that "things seem more stressful" as a result; and
- Difficulty in identifying feelings, distinguishing between feelings and the bodily sensations of emotional arousal, and describing feelings to other people (sometimes referred to as alexithymia).

Over time, repeated experiences with substance use or addictive behaviors are not associated with increased reward circuit activity in the brain and are not as subjectively rewarding as prior experiences. Once a person experiences withdrawal from drug use or addictive behaviors, there is an anxious, agitated, dysphoric and labile emotional experience, related to suboptimal reward and the recruitment of brain and hormonal stress systems. This is associated with withdrawal from virtually all addictive drugs and addictive behaviors. While tolerance develops to the "high," tolerance does not develop to the emotional "low" associated with the cycle of intoxication and withdrawal. Thus, in addiction, persons repeatedly attempts to create a "high"--but what they mostly experience is a deeper and deeper "low." While anyone may "want" to get "high," the addicted individual "needs" to use the addictive substance or engage in the addictive behavior in order to try to resolve their dysphoric emotional state or their physiological symptoms of withdrawal. Persons with addiction compulsively use even though it may not make them feel long after the pursuit of "rewards" is not actually pleasurable. Although people from any culture may choose to "get high" from one or another activity, addiction is not solely a function of choice. Simply put, addiction is not a desired condition.

Addiction Defined as an Illness/Disease by ASAM-Medical Model (cont'd.)

The qualitative ways in which the brain and behavior respond to drug exposure and engagement in addictive behaviors are different at later stages of addiction than in earlier stages. This progression may not be overtly apparent to the individual. As is the case with other chronic diseases, the condition must be monitored and managed over time to:

- Decrease the frequency and intensity of relapses;
- Sustain periods of remission; and
- Optimize the person's level of functioning during periods of remission.

Medication management can improve treatment outcomes for addiction. In most cases of addiction, the integration of psychosocial rehabilitation and ongoing care with evidence-based pharmacological therapy provides the best results. Chronic disease management is important for minimization of episodes of relapse and their impact. Treatment of addiction saves lives.

Addiction professionals and persons in recovery know the hope that is found in recovery. Recovery is available even to persons who may not at first be able to perceive this hope, especially when the focus is on linking the health consequences to the disease of addiction. As in other health conditions, self-management is important in recovery from addiction. Peer support such as "self-help" activities are beneficial to optimizing health and functional outcomes in recovery. Recovery from addiction is best achieved through a combination of self-management, mutual support, and professional care provided by trained and certified professionals.

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RECOVERY

Per the Substance Abuse and Mental Health Services Administration (SAMHSA), recovery is defined as:

"A process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential."

Through the Recovery Support Strategic Initiative, SAMHSA has also delineated four major dimensions that support a life in recovery:

- Health: overcoming or managing one's disease(s) as well as living in a physically and emotionally healthy way;
- Home: a stable and safe place to live;
- Purpose: meaningful daily activities, such as a job, school, volunteerism, family caretaking, or creative endeavors, and the independence, income and resources to participate in society; and
- Community: relationships and social networks that provide support, friendship, love, and hope.

ALCOHOLISM OR DRUG SELF-TEST

Used with permission by Lawyers Concerned for Lawyers in Massachusetts. This series of questions about one's use of alcohol and/or drugs is an informal inventory of "tell-tale signs" with many items tailored to lawyers. It is not a list of official diagnostic criteria and does not substitute for a professional evaluation.

1. Do I plan my office routine around my drinking or drug use?

2. Have I tried unsuccessfully to control or abstain from alcohol or drugs?

3. Do my clients, associates, or support personnel contend that my alcohol/drug use interferes with my work?

4. Have I avoided important professional, social, or recreational activities as a result of my alcohol/drug use?

5. Do I ever use alcohol or drugs before meetings or court appearances, to calm my nerves, or to feel more confident of my performance?

6. Do I frequently drink or use drugs alone?

7. Have I ever neglected the running of my office or misused funds because of my alcohol or drug use?

8. Have I ever had a loss of memory when I seemed to be alert and functioning but had been using alcohol or drugs?

9. Have I missed or adjourned closings, court appearances, or other appointments because of my alcohol/drug use?

10. Is drinking or drug use leading me to become careless of my family's welfare or other personal responsibilities?

11. Has my ambition or efficiency decreased along with an increase in my use of drugs or alcohol?

12. Have I continued to drink or use drugs despite adverse consequences to my practice, health, legal status, or family relationships?

13. Are strong emotions, related to my drinking or drug use (e.g., fear, guilt, depression, severe anxiety) interfering with my ability to function professionally?

14. Are otherwise close friends avoiding being around me because of my alcohol or drug use?

15. Have I been neglecting my hygiene, health care, or nutrition?

16. Am I becoming increasingly reluctant to face my clients or colleagues in order to hide my alcohol/drug use?

A "yes" answer to any of these questions suggests it would be wise to seek professional evaluation. However, it does not indicate that you have a diagnosable addictive disorder. Evaluations of alcohol/drug problems should be done by a clinician with addiction credentials and/or experience working in an addiction-oriented setting.

Compulsive Behavior

Compulsive use of a substance is seen in the inability to abstain despite clear evidence of the difficulties caused by the use. Compulsive behavior is not easy to understand and accept because it threatens our perceptions of ourselves as rational creatures.

Progression of Compulsive Behavior

Most people with an addiction show progression in use and its consequences:

- Increased use of drug(s);
- Mental preoccupation with obtaining and using the drug;
- Increased tolerance;
- Rapid intake or ingestion;
- Solitary drinking and using;
- Hiding and protecting supplies;
- Blackouts, i.e., periods of amnesia;
- Negative effect on marriage and family;
- Negative effect on social life;
- Negative effect on work performance; and
- Deterioration of physical health.

Definition of Denial: The inability or refusal to see and accept an unpleasant reality.

Common Defense Mechanism: Denial is normal in response to something emotionally threatening or painful. Its healthy use provides time to gradually accept pain by blocking it temporarily. This helps us cope under crisis, such as:

- Death, loss, grief: "it can't be true;"
- Unattractive characteristics of self or loved ones: Renaming negative features; and
- Chronic disease: Coping with cancer, heart disease or diabetes.

Distortion of Reality: Temporary denial may be helpful and not a problem. Denial helps us adjust gradually to an unpleasant fact, and then fades away as reality takes over. If it becomes a long term response, it presents necessary change.

Addiction + Denial = Denial System:

- Gradual Progressive Onset: The denial mechanism allows the user, family and coworkers to transform abnormal problem behavior into normal behavior;
- There is a substance effect on the brain's ability to perceive accurately; and
- The sporadic or intermittent appearance of problem behavior tricks and deceives the user and others into thinking;

    - It's not a disease;
    - It's not permanent – it will go away by itself; and
    - It's under willful control.

Professionals and Denial:

- High intelligence and verbal skills intensify a denial system;
- Usually has control and is the manager of others; and
- Work patterns and productivity not easily measured and monitored.

Gradual Nature: The denial system in addiction to alcohol or another drugs is built up gradually and becomes incorporated into the life patterns of both the user and the significant others. It is powerful, sophisticated, insidious, and resistant to challenge.

Interventions: Organized interventions prepare significant others to respond effectively by assembling a concentrated array of reality-based facts to decrease denial and move the IP towards a positive action point. See WisLAP Interventions for further information and guidance.

Principles of Effective Treatment

1. **No single treatment is appropriate for all individuals.** Matching treatment settings, interventions, and services to each individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace, and society.
2. **Treatment needs to be readily available.** Individuals who addicted to drugs may be uncertain about entering treatment, taking advantage of opportunities when they are ready for treatment is crucial. Potential treatment applicants can be lost if treatment is not immediately available or is not readily accessible.
3. **Effective treatment attends to multiple needs of the individual, not just his or her drug use.** Treatment must address the individual's drug use and any associated medical, psychological, social, vocational, and legal problems.
4. **An individual's treatment and service plan must be assessed continually and modified as necessary to ensure that the plan meets the person's changing needs.** Patients may require varying combinations of services and treatment components during the course of treatment and recovery. In addition to counseling or psychotherapy, a patient at times may require medication, other medical services, family therapy, parenting instruction, vocational rehabilitation, and social and legal services. It is critical the treatment approach be appropriate to the individual's age, gender, ethnicity, and culture.
5. **Remaining in treatment for an adequate period of time is critical for treatment effectiveness.** The appropriate duration for an individual depends on his or her problems and needs. Research indicates that for most patients, the threshold of significant improvement is reached at about 3 months. After this threshold is reached, additional treatment can produce further progress toward recovery. Because people often leave treatment prematurely, programs should include strategies to engage and keep patients in treatment.
6. **Counseling (individual and/or group) and other behavioral therapies are critical components of effective treatment for addiction.** In therapy, patients address issues of motivation, build skills to resist drug use, replace drug-using activities with constructive and rewarding non-drug-using activities, and improve problem-solving abilities. Behavioral therapy also facilitates interpersonal relationships and the individual's ability to function in their family and community.
7. **Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies.** Medication assisted treatment (MAT) using methadone, buprenorphine, and naltrexone can be effective in helping individuals addicted to heroin or other opiates stabilize their lives and reduce their illicit drug use. Naltrexone is an effective medication for some opiate addicts and some patients with co-occurring alcohol dependence. Campral is utilized for patients with alcohol dependence. Both Naltrexone and Campral serve to reduce cravings for alcohol and lessen protracted withdrawal symptoms. Antabuse is still used as an agonist for alcohol use. If the patient drinks while taking Antabuse they become violently ill. For persons addicted to nicotine, a nicotine replacement product (such as patches or gum) or an oral medication (such as bupropion) can be an effective component of treatment. For patients with mental disorders, both behavioral treatments and medications can be critically important.
8. **Addicted or drug-abusing individuals with coexisting mental disorders should have both disorders treated in an integrated way.** Because addictive disorders and mental disorders often occur in the same individual, patients presenting for either condition should be assessed and treated for the co-occurrence of the other type of disorder.

9. **Medical detoxification is only the first stage of addiction treatment and by itself does little to change long-term drug use.** Medical detoxification safely manages the acute physical symptoms of withdrawal associated with stopping drug use. While detoxification alone is rarely sufficient to help addicts achieve long-term abstinence, for some individuals it is a strongly indicated precursor to effective drug addiction treatment
10. **Treatment does not need to be voluntary to be effective.** Strong motivation can facilitate the treatment process. Sanctions or enticements in the family, employment setting, or criminal justice system can increase significantly both treatment entry and retention rates and the success of drug treatment interventions.
11. **Possible drug use during treatment must be monitored continuously.** Lapses to drug use can occur during treatment. The objective monitoring of a patient's drug and alcohol use during treatment, such as through urinalysis or other tests, can help the patient withstand urges to use drugs. Such monitoring also can provide early evidence of drug use so that the individual's treatment plan can be adjusted. Feedback to patients who test positive for illicit drug use is an important element of monitoring.
12. **Treatment programs should provide assessment for HIV/AIDS, hepatitis B and C, tuberculosis and other infectious diseases, and counseling to help patients modify or change behaviors that place themselves or others at risk of infection.** Counseling can help patients avoid high-risk behavior and can help people who are infected manage their illness.
13. **Recovery from drug addiction can be a long-term process and frequently requires multiple episodes of treatment.** As with other chronic illnesses, relapses to drug use can occur during or after successful treatment episodes. Addicted individuals may require prolonged treatment and multiple episodes of treatment to achieve long-term abstinence and fully restored functioning. Participation in self-help support programs during and following treatment often is helpful in maintaining abstinence.

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Can be found online at www.nida.nih.gov/PODAT/PODAT1.html

Process/Behavioral Addictions/Non-Substance Addictive Behaviors

There is debate which compulsive behaviors constitute addiction. "Similar neurobiological features have been reported between gambling, substance-use and eating disorders."[2] Gambling disorder was included in the most recent Diagnostic and Statistical Manual (DSM-V). Regardless of classification, for WisLAP purposes, there are behaviors that people engage in compulsively as they would an addiction to substances. These include "addictions" to sex, love, shopping, work, internet gaming, excessive physical exercise, and other non-chemical addictions. While we do not want to over-pathologize behaviors, when problems exist with impulsivity, diminished executive functioning, loss of control and problems with mood regulation around the activity, WisLAP is a resource.

[2] Potenza, M. N. (2014). Non-substance addictive behaviors in the context of DSM-5. Addictive behaviors, 39(1).