

The Brain and the Disease of Addiction

Quick Reference Sheet

Addiction / Substance Use Disorder is a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences.

People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences.

PREVENTION EFFORTS AND TREATMENT APPROACHES FOR ADDICTION ARE GENERALLY AS SUCCESSFUL AS THOSE FOR OTHER CHRONIC DISEASES.

We used to think addiction was a moral failing. But there is a growing body of research showing that there are differences between those who use substances and those with addiction.

One can be mentally dependent on things, but addiction suggests a more severe turning point where changes in the brain occur. Addiction changes both the brain structure and function. What began as a choice, is hardwired as CRITICAL for our survival.

CHANGES IN THE BRAIN THAT OCCUR WITH SUBSTANCE USE DISORDER ARE THE RESULT OF NEUROPLASTICITY, WHICH CAN BE SIMPLY DEFINED AS THE BRAIN'S ABILITY TO CHANGE / RESET.

A more detailed definition of neuroplasticity is the brain's ability to reorganize itself by forming new neural connections throughout life. Neuroplasticity allows the neurons in the brain to compensate for injury and disease and to adjust their activities in response to new situations or to changes in their environment.

In addiction, the brain has learned or remapped itself to make feeding the addiction the most natural and most important course of action. Our brains have the power to change, undo the remapping. With hard work, individualized addiction treatment that addresses the whole individual - recovery is possible.

NEUROPLASTICITY CAN RESULT FROM



Neuroplasticity makes our brain resilient. We can learn new ways of being and responding to conflict.

Enables one to recover from stroke, injury, birth abnormalities and in many cases overcome depression, SUD, and other issues.

The brain is always learning. It learns whatever is repeated – both helpful and unhelpful thoughts, actions, and habits.

"While neuroplasticity may be a culprit in the creation of addiction, it also holds the key to recovery. By harnessing the moldability of the brain and abandoning the neural connections fed by addictive behaviors, new pathways can be formed via the development of healthy behaviors and thought processes." -- Amen, M.D., co-author Un-Chain Your Brain

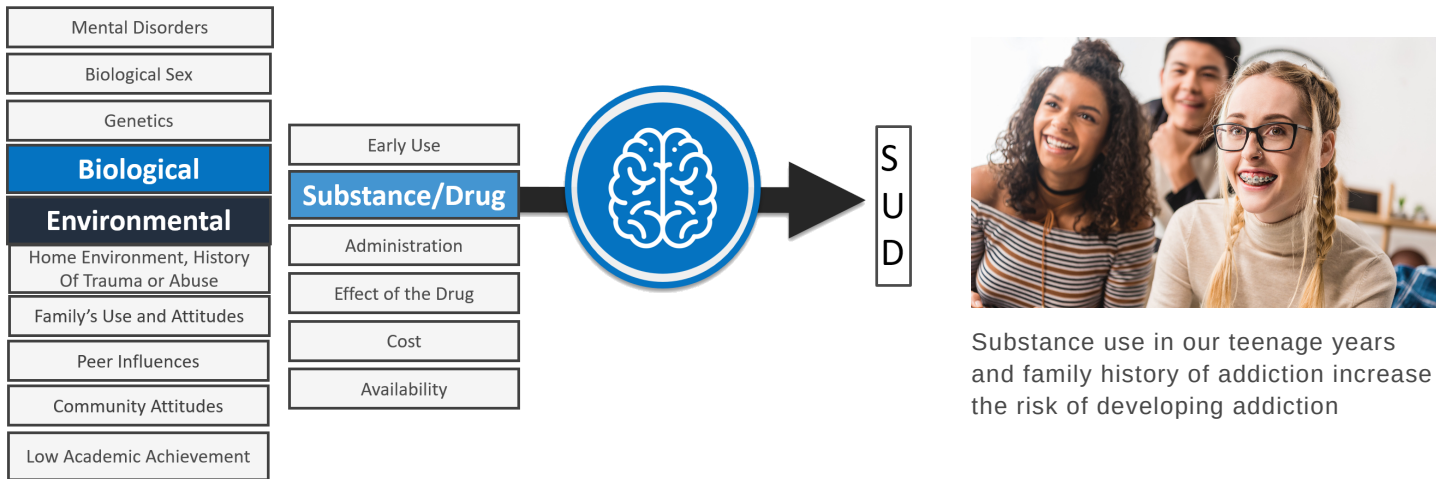


Cause and Risk Factors

As with other diseases, one's vulnerability to the disease of addiction varies from individual to individual. Not one single factor, but several factors contribute to the development of addiction which fall within two categories: **Biological** and **Environmental**.

Environmental factors include: home environment, history of abuse, family's use, beliefs and attitudes. Exposure to a peer group that encourages drug use, community attitudes and poor school achievement.

Once you've started using a drug, the development into addiction may be influenced by **Biological** traits such as genetics, biological sex, or mental disorders, which may delay or speed up the disease progression.



How the **substance is administered** increases the risks. Smoking a drug or injecting a drug will increase the drugs addictive potential. The **substance itself** also has an effect. Drugs such as Cocaine, Methamphetamine, Nicotine, Opioids (which include prescription pain medicine and heroin) and alcohol have a higher addiction rate due to their effects on the brain mechanisms. Finally the **lower the cost** and the **availability of the substance** will effect the individual risk factors.

In general, the more risk factors a person has, the greater the chance that taking drugs/misusing alcohol will lead to changes in the brain mechanism, leading to addiction/substance use disorder.

Trauma and Substance Use Disorder

ACEs or adverse childhood experiences are potentially traumatic experiences that occur from the ages 0-17.

The higher the number of adverse experiences or traumatic events children experience, the higher the likelihood of experiencing negative health effects and mental health issues that continue into adulthood.

A child who experiences four or more traumatic events is:

- Five times more likely to develop alcohol use disorder
- 40-50% Increased Risk of Depression Disorders
- Up to 46 times more likely to become an injection-drug user (or IV drug user) than the general population



Setback / Return to Use

Like other chronic diseases, SUD often involves cycles of setback or return to use and remission. Without treatment or engagement in recovery activities, SUD is progressive and can result in disability or premature death.

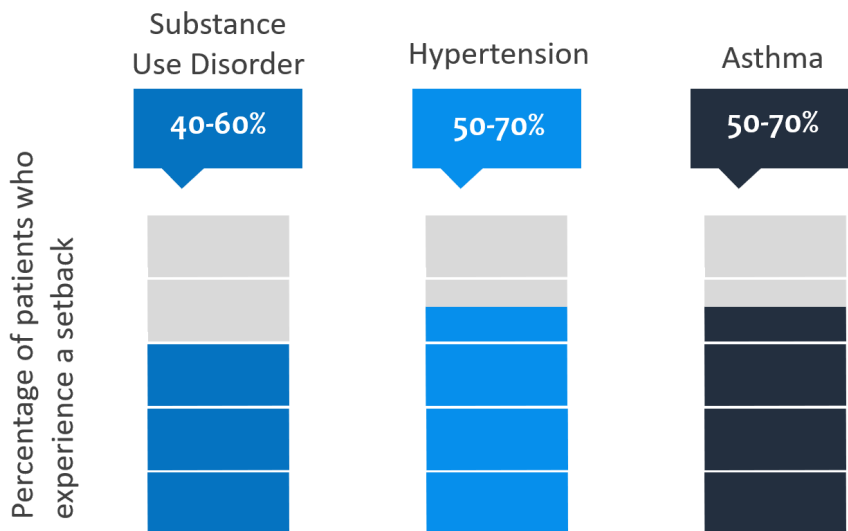


An important note about terminology. The term Setback is the preferred term rather than relapse, which can carry judgement and stigma.

A SETBACK MEANS A DETERIORATION IN SOMEONE'S STATE OF HEALTH AFTER AN IMPROVEMENT.

SETBACK RATES, OR HOW OFTEN SYMPTOMS RECUR, FOR PEOPLE WITH ADDICTION ARE SIMILAR TO RATES FOR OTHER WELL-UNDERSTOOD CHRONIC MEDICAL ILLNESSES SUCH AS HYPERTENSION AND ASTHMA.

Comparison of Setback Rates Between Chronic Illnesses



WHAT DOES A SETBACK LOOK LIKE?

It can mean a setback in health, thoughts, activities. For some people whose goal is abstinence from substance use or use of substances that have become disordered, this can include a return to use.

DOES A SETBACK MEAN THAT TREATMENT HAS FAILED?

A setback does not mean treatment has failed. The chronic nature of addiction means that lapsing back to previous disordered behaviors, including use after a period of abstinence, is not only possible but expected and indicates that treatment needs to be reinstated or adjusted or that another treatment should be tried.

RECOVERY IS POSSIBLE. WITH APPROPRIATE, CLINICALLY PROVEN TREATMENT, OFTEN INCLUDING MEDICATION, MANY CHRONIC DISEASES CAN BE MANAGED SO THAT THEIR SYMPTOMS DO NOT IMPACT A PERSON'S HEALTH AND FUNCTIONING.