

-THE ROOTS OF ADDICTION

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What is Addiction?

Jeanie: "Addiction is a disease."

Alicia "Addiction is something you can't stop even if you wanted to."

Kid 1: "Addiction is like being controlled by something 'cause you need it. I don't need to drink. I just do drink. I could quit anytime I wanted to."

Kid 2: "Yeah, right."

Joe: "Addiction kicked my ass. You know emotionally, mentally, I was all messed up and spiritually, I was dead."

Alicia "Addiction is something you can't stop even if you wanted to."

Fabian: "Gang banging is an addiction. The power, the rush you get from going out there and hurting others, demoralizing others to get the rush, you know, it becomes an addiction in itself."

What is addiction: a way of life, self-medication, a moral weakness, a mental illness, a disease, an allergy, a spiritual malady, or a genetic, environmental, and drug-induced disorder?

Cynthia: "When I got addicted to the cocaine, it was because I was being battered and I used that to hide. Okay. When I left the cocaine, I used the drinking to hide. When I left the drinking, the cigarettes kicked in. When I left the cigarettes and I began to eat. It was like I had to fill up that hole with something."

Each view of addiction has its advocates and each contains many truths. We want to use these truths to help us understand addiction, and, we want to combine these ideas in such a way that strategies for treatment, recovery, and prevention become clear.

One way to look at addiction is to ask, "What do people get out of psychoactive drug use?"

Mary: "The pleasure then that I liked was just getting high, just getting high, just feeling like other people feel. Like I don't know if you call this, 'feeling human' I guess cause you're high and you fit in with everyone else."

Dave: "It depends on what mood I'm in. (If I'm upset with something, I try to stay away from it and I usually do. Cause it usually angers me further. (6:02:08:18) I get myself all worked up over nothing most of the time, but most of the time it mellows me out." (6:02:16:15)

Many people can get the same feelings without using psychoactive substances.

Steve: "I loved to gamble. I mean I've always loved to gamble. Oh I spent ever hour of the day I could, gambling. When I was young, I'd rather go out and gamble than have sex with a girl. Hah, hah, I mean it was the truth."

Besides gambling, some other behaviors that are often used by people to change their moods are obsessive sexual activities, (is this in or out) texting, compulsive shopping, or binge eating.

Jeanne: "Well food does for me what alcohol and drugs and other things do for other people. If I'm feeling angry and I eat, it takes the anger. If I'm feeling lonely or sad and I eat, it takes care of the feelings. If I feel inadequate or empty, I fill myself with food. Or I used to. I don't do it anymore."

There are many online Internet activities that can become addictive from on-line gambling and pornography, to compulsive websurfing and multiplayer games.

Ian: "People have committed suicide over games, over these games, literally, committed suicide, because their character is deleted or something happens and its, its pathetic actually, I find it really sad. Its just like any other drug that's out there, it can ruin your life."

People can even be addicted to relationships.

Susie: "My boyfriend I guess. I mean he's definitely an addiction for me. It's like we're together 24 hours a day. We even go to the bathroom together. We're always together and when he's gone, it's like withdrawal symptoms. I mean I cry all the time and just freak out and I know he does too."

So, people use psychoactive drugs and behaviors to change their mood and to alter their states of consciousness.

Carrol: "I've never really been interested in sports and stuff like that, but sex and sexual issues is the one that has always really been a key factor in helping me to calm down and slow my mind down so I don't have to think about other things."

From Experimentation to Addiction

Just engaging in certain behaviors or using psychoactive drugs does not mean that someone is an addict. Some people can drink, gamble, use the internet, or even take prescription painkillers and never have a problem with abuse or addiction. Some can't. Use starts at experimentation and often progresses to addiction.

Experimentation = Occasional use when available but no pattern and limited consequences

Social Use = Seeking out a known drug to experience a known effect; no habitual pattern; limited consequences)

Habituation = Definite pattern of use; moderate negative consequences

Abuse = Continued use despite serious negative consequences

Addiction = Compulsion to use, obsession with the substance or behavior, intense craving, relapse.)

Dave: "It was social in the early stages - my first 5 or 6 years after I left home. It was something I never really thought about. If it was there, you did it, you know. But after awhile, as I got older, it became habitual. No matter what the occasion was, well, someone's in charge of bringing the beer."

The shift from habitual use to abuse occurs when the user continues drinking, using, or engaging in compulsive behaviors in spite of adverse consequences.

Dave: "And then there was the addiction stage. When I fell into that stage. Then, after a while, it got to the point where I didn't care what it tasted like. But you just wanted to keep the buzz going. The brain was craving alcohol."

The differences between those who stay experimental, social, or even habitual users, and those who become abusers and addicts are that abusers and addicts are intoxicated or practice their behavior much of the time.

Kid 1: "We wake up and we drink."

Kid 2: "Drink a beer."

Kid 1: "And we go to sleep right after we're done drinking at night. But we drink all day long, every day, all the time, constantly."

Kid 2: "Well except for right now cause we don't have enough money for a beer."

Addicts continue to use or practice the behavior even when it damages their lives at work, at school, and at home.

Joe: "I just don't have the luxury of drowning my sorrows anymore. It is not a viable option because I will, if I get strung out, I will commit a robbery, or I will do something extreme. I have done it before."

Addicts lose the ability to reduce intake, stop use, or stop the behavior.

Jose: "If it was up to me feeding my kids or Jose getting his next hit, my kids were not going to eat. If it was up to me to buy a gallon of milk, or pay the rent, or pay a bill. It wasn't going to happen. It had to be me. I come first that selfish, self centered, self seeking individual which is me."

Addicts continue to deny or even recognize there is a problem;

Gary: "I never, till I got into desperate trouble at the end felt that I was a gambler. Never, never once heard the word compulsive gambling. I'm sure I heard it. Never has that registered yet in my mind. Never heard the word Gambler's Anonymous. Never, I wasn't a gambler."

People who cross the line into abuse and addiction have altered their brain chemistry to a point where non-compulsive use of certain psychoactive substances or behaviors is impossible.

Jeannie “It is not just a physical addiction. It is a spiritual and emotional problem too. It just doesn’t encompass your body. Your mind is totally off key. You’re so involved in whatever the addiction is, you are not living your life. You’re living for the addiction.”

Jose: My disease of addiction doesn’t tell me that. It tells me, go ahead and do it. It’s going to be OK. The consequences aren’t told to me ahead of time. I learn that at the end.

Darryl Inaba, PharmD: “That’s contrary to how the brain should be operating. But that’s what addiction is. A person continues to involve themselves with a drug despite how many terrible consequences that are occurring because of their use of drugs.”

Craving

The craving for the drug or the behavior is so powerful that it overwhelms stop signals and thoughts from the prefrontal cortex.

Rachel: “I crossed that invisible line where I was no longer doing it because I wanted to. I was doing it because I needed to. And I didn’t feel like I could function without it.”

Continued use of a psychoactive drug leads to physiological changes that intensify craving and prolong the abuse. The two most crucial are tolerance and withdrawal. Tolerance is the adaptation of the body and brain to increasing amounts of the drug which in turn compels use of more and more just to get the same effect.

Mary: “Well I started drinking one beer. Then I went on to two. Then, like a week later I went on to a six-pack and then through the years I went on to two six packs. And then I ended up drinking tequila. I used to drink a fifth of tequila two years after I got addicted to the alcohol.”

Tolerance develops for all of the behavioral addictions as well.

Tom: “Near the later stages I could no longer go to the race track or the poker game with less than 500 or a thousand dollars where it used to be, 5, 6, 7 years ago, \$100 would be a lot.”

The other physiological consequence, withdrawal, is the attempt by the body and the brain to rebalance the biological changes caused by tolerance. This process often produces an extreme anxiety and physical chaos that can be subdued by continued use.

Giggling Girl: “You focus on it so much that eventually it just becomes your entire life. Shooting up, making more money, shooting up again, shooting up again. And when you don’t do it, you hurt so bad, you’re reminded about why you’re doing it.”

Because tolerance, withdrawal, and other changes in brain chemistry prolong and magnify the craving for the drug or behavior, it makes detoxification and abstinence a challenge.

Alicia: “I can’t even describe to you what craving is. It’s just like . . . man, it’s so strong, you know . . . you want it so bad and you’ll do just about anything to get it.”

Darryl Inaba, Pharm.D.: “There are really two types of craving that develop with drug addiction. The first type of craving is an imbalance of brain chemistry that is known as an

endogenous craving or allostasis where the brain has come to rely on an imbalance of chemistry brought about by use of drugs.”

Joe: “I’ve met people or seen people have the physical cravings and people relapse because of their craving, you know, but you know, it all starts with a thought and it’s up to me to squash that thought. But once I become obsessed with the thought, that’s when it’s a danger zone.”

Darryl Inaba, PharmD: “Actually, the more dangerous type of craving is something called environmental cues or environmental triggers and that’s the memory, the sight, the smell, anything that reminds the memory protrusions in the brain of their drug use.”

Mary: “When I’m smelling the marijuana here in the building where I live. I smell the primos which is crack laced with marijuana. I do crave. The cravings come back, and what I do is I call my sponsor. I go to meetings.”

Old Brain vs. New Brain

Addiction is a battle between the old brain and the new brain. The old brain contains instincts, drives, and bodily functions aided by a GO circuit that generates powerful cravings for certain survival behaviors such as eating and drinking but also for psychoactive substances and behaviors. The new brain, on the other hand, reasons, gives language, makes judgments, and contains a stop circuit that tries to halt old-brain cravings and behaviors when they are satisfied or potentially dangerous.

Sylvia: “You keep thinking your best thinking got you into this. So then you start to question your own thinking and then you think, “Well, I think I’m pretty smart. My best thinking got me to do this. So that’s pretty scary for you right there.”

When activated by a craving, the old brain, often overwhelms the new brain partly because the old brain acts 5 times faster than the new brain. This is particularly true with psychoactive drugs and compulsive behaviors because they activate the old brain’s go switch while the reasoning and judgment of the new brain is blocked out. The GO switch insists that the drug or behavior is necessary for survival even though it isn’t.

John: “I was convinced that I could just drink or just smoke marijuana and it just didn’t work for me. I always gravitate back to my drug of choice which for me was heroin.”

The specific collection of cells in the old brain that is most influential in creating a compulsion to use is the nucleus accumbens. It is powerfully affected by a number of brain chemicals especially the neurotransmitter called ‘dopamine.’

Darryl Inaba: “Dopamine is a brain chemical that is involved with both the compulsion to use drugs because when you have dopamine released by any drug in the brain, it causes the brain to want more. But people should also realize that dopamine is also part of the off switch. Its part of the control circuitry and once dopamine levels rise in that part of the brain that controls your drug use, it usually turns off the compulsivity.”

The problem in brains that have been altered by long-term or high-dose drug use or addictive behavior is that the off switch malfunctions.

Steve: "You go in there at 8 o'clock and say, "I'm only going to play 40 dollars and you're there the next day at 1 o'clock and you're stuck 1,400"

In addition to a damaged OFF switch, many of the nerve pathways that would normally carry any stop thoughts to the GO switch have also been damaged so once the person starts, they can't stop.

Lula: "I was drinking from malt liquor bottles, 40 ounces to pints of vodka. I wouldn't have a limit. I could just drink until I dropped."

It is important to remember that the use of psychoactive drugs or compulsive behaviors is a symptom of a brain disorder. The disorder is addiction.

Jeannie: "If you are a drug addict or a food addict an alcoholic or a sex addict. It is not about the addiction, just about the addiction it is about all the other things in your life."

Brain Imaging

The changes that psychoactive drugs and addictive behaviors cause in various parts of the brain can be imaged. For many years, Dr. Daniel Amen has studied these changes in brain function at his clinics in California, Washington, and Virginia using SPECT scans.

Daniel Amen, M.D.: "SPECT studies are very sophisticated nuclear medicine studies that look at blood flow and metabolic activity in your brain or how your brain works as opposed to a CAT scan or MRI. Those are anatomy studies."

When the brain is functioning normally, there is an even distribution of electrical and chemical activity throughout the brain. When drugs are used to excess, many parts of the brain become inactive.

Daniel Amen, M.D.: "This is a person that has serious methamphetamine abuse for about 8 years and what we see are these//// multiple areas of decreased activity across the cortical surface of the brain."

The computer manipulates the image to show areas of reduced brain activity as holes but in fact, all of the brain tissues are still there, they are just inactive.

Man #1: "I don't like being stuck on stupid, like tweaking all the time. When I'm doing speed, I'm just in this whole little world – can't get me out of it."

Daniel Amen, M.D.: "What we see with alcohol is, this is someone who had been abusing alcohol for about 20 years. And what we see is this just dramatic overall shutdown or decreased areas of activity across the brain."

Julia: "I've been a chronic alcoholic since I was 15. I'm 31 now. and I'll get through that too."

Heroin gives the classic brain melt picture, Just dramatic suppression of overall cerebral activity. Prescription opioids such as Vicodin or Oxycontin will cause the same brain inactivity when abused.

Daniel Amen, M.D.: "This is my classic marijuana picture. This is someone who had been abusing fairly heavily for about 12 years and what we see is this incredible suppression of temporal lobe activity on both sides which is going to give him and in fact did give him significant problems with his memory and significant problems with motivation."

Boy at Orloff House: "You just kind of sit there and you think, you know. And once you get it triggered on to something, it's like you keep on thinking and thinking about it. I mean sometimes it'll just blank you out. You're not even thinking at all."

Behaviors can also affect the brain's functioning. A person who's just been with his girlfriend registers changes in the SPECT scan.

Daniel Amen, M.D.: "We scanned him on love and what we found it worked right in the basal ganglia which are the structures in the brain that produce dopamine. And he looked like someone had just injected him with cocaine. And it was just amazing. So love is a drug and if you get that feeling, you want it again."

Carrol: "We had sex all the time but that wasn't enough. And it got to the point where I masturbated 4,5,6 times a day and wanted to go home and have sex with my wife too."

Besides addiction-induced changes, those with attention-deficit disorder, depression, anxiety disorders, or other mental illnesses will sometimes seek out psychoactive substances to try and control their chemical imbalance.

Daniel Amen, M.D.: "The most common question people ask me, well if you used and if you stop using, what happens to your brain. And for many people, their brain, slowly over time seems to pick up function but it depends on what you use, how long you use, how vulnerable your brain is cause we've seen some brains that are very hard to abuse and some brains are very susceptible to damage."

Heredity, Environment, & Susceptibility to Addiction

But it's just not drugs and behaviors that change the brain. In fact, the brain is changed by heredity and environment long before someone ever smokes a cigarette, drinks a beer, places a bet, or has sex.

Heredity gives us our neurological starting point by determining brain structure and neurochemical balance. Then environment, particularly stress takes over.

Fabian: "My father was a heroin addict for over 25 years and that is what made an impact in my life because that's what I remember my father as. So that played a big role in my life."

Daniel Amen, M.D.: "If you are being bathed with repetitive stress hormones and stress chemicals in your brain, it changes your brain in a negative way and can actually reset your brain to become more at risk for these disorders."

So, a person's susceptibility to use a drug or a behavior excessively is determined by heredity . . . and environment . . . but it isn't triggered until psychoactive drugs are used or compulsive behaviors are practiced.

Jeannie: "When you're a drug addict and an alcoholic, or a food addict, there's the assumption that since you're the one putting it into your mouth, or smoking it or mainlining it or whatever you're doing, that you somehow have a sense of control. You don't get any kind of sense of control until you're in recovery."

However, each person is unique and so starts with a different genetic susceptibility.

Clarence: "I knew my wife had a problem many years ago because in her entire family, they're all compulsive, pathological gamblers. And her sister died from it."

After conception, environment becomes the key factor. For example, someone with low hereditary susceptibility could have a supportive childhood and live in a community that is not extremely stressful or he could live in an extremely stressful environment.

Joe: "All I knew was drugs, streets, gangs, guns and that's all I knew. I didn't know what life without drugs, without the 'homies,' without you know, none of that. And I mean, I lost a childhood."

Physical, sexual, and emotional abuse while young are very strongly linked to later problems with drug abuse or behavioral addictions, especially eating disorders.

Jeanne: "I was molested, sexually abused, at 12 and I remember feeling really uncomfortable about my body after that and using food to just feel comfortable, maybe as a layer of protection to keep people away."

A person with a high hereditary susceptibility will need only moderate environmental influences to approach maximum susceptibility, and therefore only small amounts of drugs or behaviors to trigger addiction.

Julie: I think that it was partially biological because as soon as I started it I was on.

Studies have found that in almost every case, when an addict in recovery has a one-time slip, it soon progresses to a full-scale relapse.

Luis: "Might as well drink, you know. So then I drank alcohol and then right when I drank the alcohol, my body like feigned for the methamphetamines bad, like, you know I need to take a hit of methamphetamines, you know. So then I left and the next thing you know I'm smoking meth, I'm smoking crack and I'm doing it again, you know. And next thing you know I'm living in the streets and robbing people."

Darryl Inaba, Pharm. D. "The importance of the fact that anytime an addict in recovery has a slip or starts using drugs that in 95% of the time resulting in a full scale relapse is that addicts have to learn to do everything they can anytime they are having a craving to taking that first one. If they can avoid that first slip, they can avoid a full scale relapse."

Jim: "It's never curable. You're not cured ever. You can't just stop and be complacent and I've been complacent before in the past and that's when I tend to slip and relapse."

The real key to recovery is to change one's lifestyle after abstinence is initiated so the desire for drugs or certain behaviors disappears.

Jeannie- "I have to work on my behavior. How do I act with my husband? How do I act with my children? How do I act in relationships? My addiction carries over to all that, it carries over to my whole life."

Recovery & Sobriety

Fabian- I'm always trying to be the model for the next man to come. It can be done. I have to represent that through the arts and just by the actions that I take today and what I do is to influence the others who are struggling with their addiction or in gang culture."

Darryl Inaba, Pharm.D.: "I think one of the key things that addicts and non addicts need to understand is that this condition known as substance use disorder is an actual biological illness. It is an actual difference in a persons brain that robs them of control of their use of drugs or alcohol and then conspires against them if they want to stay clean to get them back using as soon as possible And what's important is that the addict has to realize they aren't stupid, they aren't crazy but what it is they just they have a different function and operation of the brain."

So, if heredity, environment, and the use of drugs or certain behaviors work together to alter brain chemistry and cause addiction, how is recovery possible? Well, people can't change their heredity but they can be aware of it. And if there is a strong family history of addiction, they can be extra vigilant about changing their behavior and pass that knowledge to their children.

Rachel: "I explained to them they had a high chance because of the genetic factor. And his father...my children's father...his family...my family... It was just everywhere. It was rampant so they got a good healthy education. And I think it's been very, very important and they know to stay away and they don't want to go there."

Addicts can't undo the abuse they might have suffered in the past but they can subdue the emotional turmoil those traumas caused.

Mary: "Well now I've forgiven I've learned to forgive my step father. I have wrote him a letter and told him I know what he had done to me in the past years and I never was able to tell my mother because my mother was in an abusive relationship also with him."

Along with being aware of their heredity, and changing their environments, addicts need to continue abstaining from all psychoactive drugs and all addictive behaviors not just their drug or behavior of choice because any use weakens the stop switch.

Father Greg Boyle (Founder of Homeboys Industries): "So Homeboys Industries is the largest gang intervention program in the country. Principally not for those who need help but for those who want it. . . and so you have to walk through our doors. That is the important thing, just like any rehab. And so this place is a therapeutic community that will hold you at the same time you are learning things including soft skills to go work in the real world."

Joe: "Now that I'm in recovery, I see how the addiction is transferred...it goes to other areas of my life. You know, I just thought I was drug addicted, but I'm finding out that I'm...sex, food, clothes, shopping, you know and I just think its...for me, it's a substitute kind of like I'm substituting my feelings."

Learning and practicing ways to overcome craving is probably the most important skill a person in recovery can learn.

Darryl Inaba: "Science has discovered an extremely wonderful phenomena called extinction. And what extinction is that an addict who experiences a craving and refrains from using the drug, weakens that craving for the next experience. So every time an addict craves a substance and does not use then the cravings are going to get weaker and weaker and in time may even dissipate."

Jeanne: "Your life is so much better because you're not living in the fear. You're living out there enjoying life, you know. You're taking risks before you're too worried about being hurt"

Lula: "Sobriety changed my life – beautiful, beautiful. The first year I didn't understand it. The second year I kind of caught it a little bit. I'm going on my third year and it's beautiful. It has its ups and downs, but you know what? It's much better than what I used to do before"

Darryl Inaba: "It's long been known in the treatment community and in addicts themselves that what often helps them more than the science, more than the medicine, more than the counseling, more than anything else is having a spiritual awakening. Having an understanding that they are basically a good person...that there's a purpose and they have a value in life and there is something of value to work towards."

Fabian: "Every time I see someone, it's a reminder – oh, you almost got there...oh, remember this....remember that. Help them. Be of service. And that's the commitment that I have with my higher power and I must continue to do that because if I don't, then I'm detaching myself from what it is that I'm seeking, which is recovery – lifetime process."