

ALCOHOL & ITS EFFECTS

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(Spike Jones musical video)

Part 1: OVERVIEW & EFFECTS

Besides lubricating tonsils at a drinking party, alcohol has been used throughout the centuries and in almost every country in the world as

- a medicine,
- an antiseptic,
- a sacrament for religious rituals,
- a beverage with meals,
- and a dozen other ways.

Man (65 yrs. old): "I really enjoyed drinking. I really did. And I haven't found anything, actually I haven't looked very hard, but I just haven't found anything that I enjoy as much."

Woman (35 yr. old): Escape, absolutely escape. It's all about running away, numbing your feelings because you can't, I can't, accept life on life's terms."

Eric (32 yrs. old): "I consider myself a quiet person but when I drink I'm able to talk, you know. I talk to this person or I talk to that person, you know, and it opens my life."

Boy: "It was like a different experience. I mean it was like you were out of your own body, into another's body, and you were just experiencing new things."

One reason for the nearly worldwide legality of alcohol is its use as a major source of revenue for corporations and particularly governments.

Distiller: "We pay tax every two weeks on what we ship out and with spirits it's a pretty heavy tax. \$13.50 per proof gallon goes to the federal government."

For various reasons, the use of alcohol has also been restricted or banned by almost every country in the world but usually, because of demand and a need for revenue, most restrictions have been overturned.

Alcoholic Beverages

College Student during St. Patrick's Day celebration: "How many drinks have I had so far? Well let's see, I went to be about, five in the morning, I had about 12 drinks last night...too many, too many."

This is one alcoholic drink . . . This is one alcoholic drink . . . This is one alcoholic drink.

What makes each one an alcoholic drink is the presence of about 2/3 of an ounce of pure alcohol. It is the pure alcohol that affects the brain and other organs.

- Beer contains 2 to 8% alcohol;
- wine is usually 8 to 14% alcohol;
- while distilled liquors and whiskeys are 35 to 50% alcohol.

Girl (16 yrs. old): "I was drinking 'hard A,' like more um tequila, Hennessy, Vodka. I wasn't really

into beer. I'd drink beer when I'd steal it, 'cause it was real easy to steal from stores. So that's when I'd drink beer, but hard alcohol I didn't have to drink as much, and I got messed up faster."

Though there are a number of different kinds of alcohol including:

- methyl alcohol, also known as "wood alcohol,"
- isopropyl alcohol commonly called "rubbing alcohol,"
- and butyl alcohol, used for industrial processes,

it is ethyl alcohol, also known as "ethanol," that is the main psychoactive ingredient in all alcoholic beverages. Ethanol is created when yeast is added to certain fruits, vegetables, or grains and allowed to ferment.

Absorption, Distribution, & Metabolism

Alcohol takes a long trip through the body.

- It enters through the mouth where the saliva slightly dilutes some of the alcohol as a small amount is absorbed by the mucous membranes.
- It then travels down the esophagus and flows into the stomach. About 20% of it is absorbed in the stomachs of men but not in those of women.
- The alcohol then passes into the small intestines and is absorbed into the tiny blood vessels, capillaries that line the walls of this part of the digestive system.
- From there, is collected in the blood stream, and pumped through the liver where it will be partially metabolized, that is, neutralized, by enzymes, particularly one called "alcohol dehydrogenase."
- The partially metabolized alcohol then continues its journey to the heart where it is pumped to and through every organ in the body, especially the brain where it will have its greatest effect.
- As it continues to circulate through the blood, the alcohol gradually leaves the body through the kidneys, the lungs, and the skin, as water and carbon dioxide and to a lesser extent as alcohol.

Woman: "Since I've been here I just keep taking showers because you're sweating and going on and all this alcohol is coming out you, you might can't smell it, but the peoples around you can smell it coming out your system and stuff, you know."

Blood Alcohol Concentration (BAC)

The effects of alcohol are mainly dependent on the amount of alcohol that is absorbed by the body. The rate of absorption depends on physical characteristics such as body weight, gender, health, and age.

Because alcohol is metabolized at a defined continuous rate, it is possible to determine how many drinks will produce a certain blood alcohol concentration or BAC.

(GRAPH OF WOMAN'S BAC VS. MAN'S BAC)

This graph compares a man and woman, each of whom has drunk 5 drinks in one hour. Women usually absorb alcohol faster than men and get a higher BAC from the same amount drunk.

(GRAPH OF CHUG-A-LUG VS. SLOW DRINKING)

For example, if a 150 pound male drinker chug-a-lugs five drinks in one hour versus having five drinks over a period of five hours . . . it takes about 12 hours for the alcohol to leave the body whether chug-a-lugging or pacing oneself.

LEVELS OF USE

After abstention, the five levels of alcohol use are experimentation, social/recreational use, habituation, abuse, and addiction (alcoholism).

Experimentation

Mary: "My first experiment with it was bourbon, and that I would Boone's Farm up a wine without them, and that was a pretty good high, even though we got sick all over the place. Never stopped us though."

Social/Recreational

Boy: "I drunk more socially to open up more. You talk like a lot more, you feel more comfortable."

Habitual

Steve: "My style was to kind of drink when, you know my school work was done, say like on weekends or holidays and that pattern I pretty much adhered to through junior high school, high school, college, and law school."

Abuse

Native American: "I went through a phase where I thought it was great, because hey, I could go ahead and get, have fun, get drunk, black out. The next day, you know, these people would be coming to me, you did this, you did this, you, you broke out the windshield of my car, you know, you hit your brother, with a baseball bat."

Addiction

Girl: "The thought of not drinking didn't even cross my mind. I was just like, you know, nothing could stop me from drinking. I was, I drank, all day. I was drunk from the time I woke up, and was able to get drunk, 'till the time I went to sleep."

SPECIFIC EFFECTS OF ALCOHOL

DESIRED EFFECTS

Alcohol is desired because it acts as a depressant, which means that it can be used as a mild relaxant to lower muscle tension and stress.

Ray: "You didn't feel no pain. I just functioned just like, hell I thought I felt like a million dollars."

Marc Schuckit, MD: "One to two drinks per day decreases the chance of gallstones, one to two drinks per day makes people feel as if they have an enhanced appetite often, if it's done with meals, and one to two drinks per day is associated with a decreased risk for heart attack and at least one form of stroke."

Alcohol's effect on the cardiovascular system is dose related and is mostly due to its effect on various fats in the blood.

Marc Schuckit, MD: "Somebody who drinks one to two drinks per day, they're the ones that get the cardiovascular effect, just one drink per month probably has no cardiovascular effect. It is a dose phenomenon, and the higher the dose you get above two, the greater the problems that you have."

Donald Trunkey, MD: "If alcohol is taken in moderation, we have no evidence that it causes permanent cellular damage, that the body can handle it."

One of the most desired effects of alcohol is its ability to disinhibit the user.

Boy 2: "Alcohol, well you can, you can say anything you want without even thinking about it, thinking about the consequences of saying it."

Daniel Amen, MD: "It affects the frontal lobes, the front part of the brain, which in human beings is the largest part of the brain, it's 30% of the human brain. That's the part of your brain involved with thoughtfulness, forethought, planning, concentration, organization, thinking before you say things, thinking before you do things."

Lynette: "At one drink I get I would get freelance. Two or three drinks I would get what a lot of people would like to refer to as bottled courage, and it would really open a lot of doors. I'd get real mouthy."

The disinhibition caused by alcohol is mostly due to its manipulation of GABA, an inhibitory neurotransmitter.

Ivan Diamond, MD: "In addition, there are other neurotransmitter receptors in parts of the brain and many laboratories study different ones. To name a few: NMDA receptors, the GABA receptor, the adenosine receptor, the ion channels, like calcium channels that are involved. So that we're talking about a complex set of regulatory events that add together to control a behavior."

Boy 3: "I'd be going somewhere with my homeboys, and I see some females, I'd be, 'Just stop right here,' you know, just get off and talk to them 'cause I was drunk you know."

Girl: "Girls don't, drink to have sex. They drink to have fun. And a lot of them drink to open up. Because they're more shy and they feel that they can talk to guys better."

Marc Schuckit, MD: "So alcohol isn't necessarily an evil drug, that is, if people do not have contra indications to drinking, contra indications are things like pregnancy or taking medications that will be affected by alcohol, or somebody who has had alcohol dependence in the past."

Other contraindications for even light use of alcohol include

- preexisting physical or mental health problems,
- a deficiency of the enzyme alcohol dehydrogenase,
- and an allergy to nitrosamines or other congeners found in alcohol.

SIDE EFFECTS

As the amount consumed increases, the initial desirable effects are often accompanied by unwanted side effects.

Steve: "It relieved depression. I learned subsequently that it's a depressant so that after the initial uplift it contributed to a lower low afterwards."

Ray: "I've been in construction all my life and alcohol and work does not mix and that's why I've

got all my apprentices because if I'm going to drink, I won't work and if I work then I don't drink."

Chico boy eating: "Oh, we'd been celebrating earlier, now we're eating and then we'll be celebrating more."

When alcohol is used independently of meals or as a replacement for food, proper nutrition is a problem.

Steve: "Well, when drinking, I wasn't the least bit athletic. I had no motivation to take care of myself through exercise or eating right or whatever so I always gained a lot of weight."

Some other negative side effects of low to moderate drinking can be legal problems, accidents, unwanted pregnancies, and high-risk sexual activities.

Christine: "When I used, my behavior was really dangerous, I did a lot of things in this behavior. I'd do things that normal people wouldn't do. I was very promiscuous. I had a lot of unsafe sex. I contracted hepatitis C."

HIGH-DOSE EPISODES

Guy: "State that I'm going to be in five hours from now? I will be in horizontal and I'm going to be feeling good cause it's going to be fun, you know."

Episodes of intoxication should not automatically be defined as alcoholism or even abuse. High dose use, particularly in high school and college, can still be defined as social /recreational use, if there are few serious consequences and it doesn't progress.

Gerard: "It became kind of a macho thing. You know the more you could drink, the more manly you were I guess. You know there was status with . . . the more the consumption, the higher the status level."

Episodic high dose use is often referred to as binge drinking. In surveys it is defined as having five or more drinks at one sitting. Three to five drinks in an hour for men and two to three for women cause legal intoxication although the actual effects of binge drinking are also dependent on mood, drinking history, and especially, the setting.

Boy: "I was at a party, a day before my birthday and we was drinking Bacardi 151 and I didn't really like it but I just drunk it anyway cause that's all that there was to drink there. And I got drunk, real drunk and started acting stupid."

About 28% of high school students and 45% of college students have five or more drinks at one setting at least once every two weeks.

Charley: "Yeah, we drank quite a bit in my dorm and generally when somebody came into my room, on a weekend night, you had to take a bong, a beer bong."

Seanna Quinn: "I think men still drink more alcohol than women do and they drink more often however our latest survey that we did on our campus showed that our young women are increasing the amount of alcohol they are consuming and try and keep up with the men."

As the blood alcohol concentration rises, effects can go from lowered inhibitions and relaxation, to decreased alertness and clumsiness, to slurred speech and inability to walk, to unconsciousness and death.

Boy: "We had like ah, a couple gallons of Canadian Mist, and we mixed that with Squirt and I

drank like a, for like a fifth of it. I was uh puking up blood, I had blood coming out my nose, and it was, on my XXX I passed out, and I didn't wake up for like a day and a half."

Daniel Amen, MD: "Now, when they can't breathe, when they go into a coma, it's really their brain stem that's a problem with very high alcohol levels."

Gerard: "Actually a couple of times the ambulances showed up. When people were kinda comatose, ya know, yikes, I think she overdid it."

Seanna Quinn: "A freshman died from alcohol poisoning during a pledge incident and we have had two other students die in the past going through their rite of passage of 21 drinks on their 21st birthday."

Steven Karch, Medical Examiner: "Alcohol poisoning is basically a young person's disease and about the only setting where you hear about it is one of these student's who's pledging a fraternity. The reason that you don't hear about it occurring in older people is that as with all drugs you develop tolerance."

Seanna Quinn: "The fraternity where the death occurred, part of their sanction by the district attorney's office was that they provide the community with some alcohol prevention billboards and those are throughout our community right now."

Gerard: "Putting a guy in the ground, did nothing for our feeling for us being the indestructible, you know, kids that we were. That age of, god we're young and strong, and there's nothing we can't do. There are no consequences to this behavior. And even seeing it, going to the funeral, watching the hearse drive by, it was like duh, didn't make the connection."

Chronic High-Dose Use

Ray: "I had a 20-ounce 7-Up bottle and I would fill it halfway with brandy and then the other half would be with water and then I'd shake it up and I would just sip, sip, sip all day long, laugh."

Chronic high-dose use can develop in six months or it might take 30 years.

Ray: "As the alcohol progressively got worse, I was working less and drinking more to where to finally it got to where I wasn't working at all and life was just going right down the toilet, more or less."

About 10% to 12% of drinkers progress to frequent, high-dose use. This rises to about 20% for the 18 to 25 year-old age group.

Ray: "I was down to a hundred and eight pounds. Well hell I never, I never even look in a mirror. You have to sneak up on the sink to get a glass of water, heh, heh, heh."

The two main physiological factors that lead to chronic high dose use are tolerance and withdrawal.

TOLERANCE

Boy: "I drank like, a forty, and like the forty was like a, gimme, get me drunk, and I'd throw-up like once, of the forty and I just kept on drinking it every day until I didn't throw up no more."

Steven Karch, MD, Medical Examiner: "It used to be thought that a blood alcohol level of .50 were uniformly fatal. Before I was a pathologist, I worked in an emergency room and I remember seeing people with blood alcohol levels of .50 wake up and leave cause they didn't feel they were

taken care of adequately or they wanted to go get another drink.”

Tolerance occurs as the body, especially the liver, attempts to adapt to ever-increasing amounts of alcohol. It adapts by

- creating more metabolizing enzymes,
- by desensitizing tissues,
- and by modifying behavior so they won't appear drunk.

Girl 2: “You know, I'd drink and I'd still be sad, and I'd drink more, and I had, it got to the point where I had to drink so much more to not feel anything that it was like I was drunk all day long.”

As the drinker ages and the liver becomes damaged, tolerance starts to decrease so the fifth of whiskey needed to get high when one is 25 becomes a few glasses of wine at age 60.

WITHDRAWAL

When a drinker stops drinking after high-dose use, the altered body chemistry tries to readjust to the sudden lack of alcohol.

Don: “And I wake up in the morning with nasty hangovers which causes me to drink some in the morning just to get my motivation, my brain going you know.”

Hangovers can occur with any level of drinking from experimentation to addiction. More severe withdrawal symptoms usually occur with chronic, high-dose users.

Woman 3: “You're body is going through so many changes, you can't hardly breathe, you shaking. A hangover, yeah, you might be sick for a couple of hours, that's different between withdrawals but with withdrawals, it will kill you.”

Withdrawal after cessation of frequent high-dose use can be life threatening.

Woman 2: “I was going to detox at my girlfriends house, she had some Librium and she was going to have me detox at her house and she realized how sick I was when I got there, so they made some calls and hooked up with Haight-Ashbury, took me down to Tom Woodel Clinic and they got me stabilized with fluids and Ativan.”

Delirium tremens (DTs) is a life-threatening form of severe withdrawal that includes hallucinations and convulsions.

Woman: “I was very sick, very nauseous, pains in my stomach, headaches, shaking, filled with sheer terror, I've never known fear like that in my life.”

Jerry Clark, CDAC: “We see people bounce back pretty rapidly within three to five days, they're ready to go into treatment. Other people it's two to three weeks and sometimes even longer.”

OTHER LONG-TERM EFFECTS OF CHRONIC HIGH-DOSE USE

Donald Trunkey, MD: “We're talking about people who abuse alcohol either on a daily basis or they are binge drinkers. It's the high amounts of alcohol over time or on weekends that causes this irreparable damage.”

Mary: “After 30 years of drinking I have developed mitral valve prolapse, a heart condition; fibril

malaise, the deterioration of my muscles; I have the early stages of osteoporosis; have an ulcer in my esophagus; my memory is not good at this point of 48 days of sobriety. It's hard for me to make decisions, and I have probably lost fifteen years of my natural life, due to my alcoholism, drug use."

Donald Trunkey, MD: "I think the most insidious part about alcohol is it causes degeneration. It deposits a fat like material into the liver, the pancreas, the brain and this over a period of time is what we call the degeneration of the cells and loss of function."

Elizabeth: "I know that my liver is in bad shape. That's what happens when you drink and don't eat. I wasn't even eating."

Ann Avery, MD: "Here we have three examples of liver, a normal healthy liver, a liver affect by steatosis or fatty infiltration of the liver and chronic cirrhosis of the liver. As you can see here this is a tan healthy liver. You can see the vessels and if you look closely you can see lobular architecture. In contrast this is a softer more yellow liver. The capsule, it's expanded and this is due to an accumulation of lipids or fats in the liver. After years of alcohol use, the alcohol will directly injure the liver. This causes a lot of fibrosis or scarring of the liver in response to the alcoholic injury in the cirrhotic liver you have an abnormal architectural pattern which tends to block the bile flow, it tends to block blood, which flows through the liver."

Woman 1: "My husband was an alcoholic as well, and had cirrhosis of the liver, the most horrible things to die from. He was swelled up, he was as thin as I am, swelled up, huge, his stomach was the size of a nine-month pregnant woman and his coloring was just orange."

Digestive effects of chronic drinking also include ulcers, diarrhea, pancreatitis, bleeding, and malnutrition. Endocarditis, an enlarged heart, high blood pressure, intracranial bleeding, and stroke are seen with frequent high-dose use.

Ann Avery, MD: "This is an example of the dilated cardiomyopathy, this is the heart of a 30 year-old woman. This is twice as big as it usually is. A young woman should have a heart that weighs around 250-300 grams. You have a big, boggy heart that doesn't function very well because the muscle is directly injured by the alcohol."

Donald Trunkey, MD: "Unfortunately if you drink long enough there gets to a point where the liver damage, the pancreas damage, the heart damage, the brain damage is irreversible. You can't repair it. On the other hand I have seen patients who had severe fatty liver caused by alcohol and if they quit drinking, the liver can repair itself."

OTHER EFFECTS

Alcohol can lower inhibitions and increase sexual desire but as high dose use increases, the physical ability to perform is impaired.

Don: "I don't really remember making love with a woman when I was sober. It's usually when I had a couple of drinks in me or if I was that far gone, then I would probably go with the woman or bring the woman home and I would go to bed with her and I would probably fall asleep on her and she would get up and leave."

It can be difficult to distinguish between a mental effect and a physical effect of alcohol because both are caused by actual alterations in brain chemistry, and even within the genes.

Ivan Diamond, MD: "There are switches that allow there to be changes in the way genes work, that they can be turned on or turned off. One of the things that alcohol does is it turns on and turns off some genes, and that changes the communication between the cells, ultimately leading

to a change in the network of the cells and you get a different kind of behavior.”

Woman 2: “It was like an allergic reaction and my body could not filter it, could not handle it but I kept doing it like this, this one’s going to be different, it’s insane. It’s insane, it’s insanity, it’s total insanity, once you take that first drink the switch goes off and you’re gone.”

Susan Tapert, Ph.D.: “It could well be that memory is affected earlier on in the young person’s drinking career because in our study of 15 to 16 year olds we did see significant differences in their ability to retain new information whereas we did not see any differences in their ability to perform non-verbal tasks or to do problem solving.”

Mental health problems ranging from schizophrenia, bipolar disorder, major depression, antisocial personality disorder and even attention deficit disorder are very common in people who have developed alcoholism or other addictions.

Woman 3: “I was drinking on a day to day basis, just drinking and then I wound up at the hospital and stuff, I tried to commit suicide, they put my in psych ward and that’s how I wound up here. It’s just painful for me.”

Ray: “I look around all my friends are dying on me. And Gee whiz, I mean, all the guys, all my buddies I used to drink with, they’re keeling over and it’s just, oh, it’s kind of depressing in a way.”

Part II: From Addiction to Treatment

Addiction (alcoholism)

(Musical drinking horse)

Girl: *If I were a normal drinker, if I ever crossed the line even one time, I’d stop, you know. Normal people stop. I didn’t and I kept going.*”

Ivan Diamond, MD: “The ones that lose control are the ones that get an enjoyable experience but can’t stop, it’s not like they’re drinking to satisfy the loss of alcohol it’s just that they can’t seem to have a feed back mechanism that tells them to stop when they should.”

Gerard: “Every time I swore off man, I was done. Man, I mean it this time, man I was done with this. You know, its I hate this. Its killing me, its taking everything from me, its no longer my friend, I’m d-I’m out. Time out, pull over, you know, and I meant it. And just, you know, here, there you’d be, 24 hours later. Damn, here I am again, how did this happen.”

Ivan Diamond, MD: “What seems to happen is that we have centers in the brain that reinforce pleasurable and rewarding experiences, so much so that in experimental animals the animal can be given the opportunity to stimulate that part of the brain and the animal will continue to stimulate it, even to the point of not eating or drinking, and dying, so that the power of this pleasure or reward is an intense driving experience.”

Lynette: “My addiction has been extremely powerful, extremely sneaky. You know the book says it’s cunning, powerful, and baffling, you know, and that is a fact.”

Ivan Diamond, MD: “There are people who believe that the prefrontal cortex is very important in making the judgment about satiation and the cut off, other invoke the nucleus acumbens, even parts of the nucleus acumbens, not just the nucleus acumbens but parts of it. Some consider hippocampal areas very important.”

Of the 280 million people in the United States, about 75% have drunk at some time in the past

year, 16% report bingeing, five drinks at least once in the past two weeks, while 6% report heavy alcohol use which is at least five or more drinks on five or more days in the past month. About 12 to 14 million people in the United States have developed alcohol addiction (alcoholism).

Ray: "I would set there and have that half-a-gallon sitting right there by my chair and I'd watch it and when that thing . . . my attitude, I notice my attitude would change. The close it got to being empty, I'm looking at the clock . . . am I going to run out."

Steve: "I would, on a given party occasion, I'd have like three drinks going at once; you know one in the kitchen, one in the living room, and one you know on the way. And nobody would ever know objectively how many I'd had."

HEREDITY, ENVIRONMENT, PSYCHOACTIVE DRUGS

Native American: "There's something in our chemistry or whatnot to where we are predisposed to be alcoholics. And then the environment I was raised in, everybody drank."

Most current concepts look at addiction as a progressive illness or syndrome that is caused by a combination of hereditary and environmental influences that are triggered and aggravated by the use of alcohol or other drugs.

HEREDITY

Mary: "I believe that that craving for it was genetically put into me and once it was triggered, to let go, whatever it does with the brain the neurons in the brain were telling me to, that my body could handle this."

Marc Schuckit, MD: "I think that there are genes that impact in a variety of `different characteristics that increase or decrease your risk for alcoholism. We already know the genes related to the alcohol metabolizing enzymes, some very good laboratories are closing in on the genes, or some of the genes, likely to contribute to disinhibition. And our group and others are searching for the genes that are contributing to the low response to alcohol."

Ray: "Fortunately or unfortunately, I mean I never did get hangovers. Sometimes you're a little slow in the morning getting up but I never did feel bad."

Marc Schuckit, MD: "We're saying we know a low response to alcohol is genetically influenced, it's seen before the alcoholism develops, and on follow up it predicts alcoholism later."

Woman 2: "My parents were alcoholics and I have four brothers, they are all alcoholics, one of them is in recovery."

Jerry Clark, CDAC: "I've seen children, brothers and sisters grow up, one being the alcoholic and the other one being what we call a "normy," and they come from the same genetic background. They explore drugs together or alcohol together but one has a reaction and the other one doesn't."

Marc Schuckit, MD: "If all of the genes that impact the alcoholism risk are considered together, they explain, altogether, 60% or so of the risk. That means environment explains 40% of the risk."

ENVIRONMENT

Norman: "I call this the war zone. You see everything. You see people running around like a chicken with their head cut off trying t find the dope man r they're drunk. They're passed out

drunk on the sidewalk and stuff and then I see people get robbed when they're drunk and stuff like that."

Steve: "My mother was an alcoholic and she ran through a series of four different marriages and we moved from time to time and we were always like the new people in the neighborhood."

Jerry Clark, CDAC: "If the parent is modeling a certain behavior and even if the kid doesn't like that behavior, he's curious about why they do it and so they might experiment."

Elizabeth: "When I was growing up you know my father was in the army and it was something wrong with you if you didn't drink."

Don: "When we got off the ship to go on liberty. You'd be walking down the street. It would be bar, bar, bar, bar, grocery store, hotel, bar, bar, bar and so forth."

Buddin: "Abuse, both physical and sexual abuse, is, uh, is of high incidence of this group of women that are then addicts, of one kind or the other. They started out in a home, where there was a drug addiction alcoholism, and they got abused."

Woman 2: "I think that's what I suffered from, the brow beating, the emotional abuse, which I think can probably be worse, because those scars stay in you, you know."

Angela: "My mom would throw chairs at me, she would pick me up by my hair and swing me around the room and throw me against the wall. I mean she would take a belt and whip me with it until I couldn't stand any more."

Lynette: "She introduced me to crack cocaine at age 13, to prostitution at age 11, I was sexually exploited by my mother. I have a lot of issues around abuse, sex abuse."

PSYCHOACTIVE DRUGS

Ivan Diamond, MD: "It's clear to me when you see patients who go beyond regular drinking and become a victim of excessive drinking, that they have turned around certain functions in their brain, they've turned around certain chemical properties, that have now made them experience a medical disorder."

Girl 3: "At the beginning I could take like two shots of something and be drunk or something like that and afterwards it was like all the other rest of the girls would be like, have like three or four shots and they'd be like, oh, I'm so drunk, I'd be just like, yeah, okay, where's the rest of it."

SOCIAL & LEGAL CONSEQUENCES

LOSSES

Gerard: "I mean the alcohol wasn't giving anymore, it kinda started to take. But it started to take like, for example my Saturdays. I was never like, conscious on a Saturday, from probably age 25 through 35."

Elizabeth: "I lost all my savings. And then after that I started, I needed to rent out my apartment and move down to the small one downstairs so I lost my home, my house."

Boy: "I could have made it somewhere in baseball, I was, I was really good at baseball. And then after I started using, I just quit. Everything went to hell."

CRIME & VIOLENCE

In various studies, the majority of those arrested had alcohol and/or other psychoactive drugs in their system when committing a crime.

Boy: "I went to jail a lot, a lot for being drunk, being drugs, for committing crimes, lot of assaults and deadly weapons, and type of things like that."

Trunkey: "In trauma surgery I would guess the majority of patients that we see have alcohol involved. In motor vehicle crashes for example, 35% we know are legally drunk when they arrive in the emergency room. For domestic violence, it's much higher. For assaults it's probably close to 80%."

Alcohol and other drugs lower inhibitions and often trigger suppressed anger.

Eric: "Once I drink my whole character changes. You know if someone says something to me I think they're being very offensive and my defenses go up you know and that causes a lot of problems."

Alcohol can also lower defenses making it easier for women to be physically or sexually assaulted.

Girl: "I remember getting drunk, like really drunk one night, and um, I was at some party, and um, I went with a few friends that were also drunk, so they couldn't really take care of me. And um, I was in the bathroom, and I was throwing up, and I don't remember anything else. I guess I passed out. And um, I woke up on the bathroom floor, and I didn't have clothes on. They had taken off my clothes, and they were touching me, and he hadn't seen them rape me, but, you know, I'll never know, because I'm s—I wasn't conscious."

Girl: "I was actually slipped date rape pills before, in one of my drinks. At this party and I was like awake, and conscious, but I had no idea what was going on, I don't remember the rest of the night."

Girl: "if you're walking down the street and you're drinking alcohol, you need to know that there are things that can happen to you that can't happen to guy. Yeah, guys can get into fights or whatever, but girls, we can get violated sexually."

Kid: "If she's drunk and she don't know what she's doing, if she's drunk, don't disrespect her. You've got to make sure she's willing too."

Chico woman: "Guys get very violent, they get derogatory. Women they just drink and have a good time... We become like sort of the victim of the men drinking... I mean that's just the way it goes, I don't know. That's just my experience."

Girl: "I believe as soon as you pick up that drink, and you start to get drunk, you're putting yourself in the position to have that happen to you. You know, you're putting yourself in the position to wake up the next morning, and not know who that person is laying next to you."

DRIVING UNDER THE INFLUENCE (DUI & DWI)

Policeman: "An officer can pull up to a traffic light and the person is staring straight ahead and their face is up against the windshield of the car. Those are all indicators of that person might be

under the influence of intoxicants.”

Chico kid: “If you’re too drunk to drive, take a taxicab. If you can’t take a taxicab, you’re walking.”

Policeman: “The people that we arrest try to stall as much as they can. They try to get, well they’ll ask for a lawyer, they’ll ask for all kind, to talk to a lawyer. They ask all kinds of questions. They’ll try to let enough time go by, but it’s been our experience that it doesn’t help. There’s just...the alcohol’s gonna be in the system. We have people that have very high blood alcohol levels that can walk and talk and look just like you and me that have never had a drink. But when they go through some of these tests and do the eye test, that’s where they can’t control and that’s where we see it.”

Don: “I remember once I ran into a fire hydrant and knocked a fire hydrant down and g stuff like that and oh, I used to b e a wild man in my car drinking and what have you. But I just figured that was a sign of your youth. You’re in your late teens.”

FAMILY

Alcohol abuse and addiction affect not only the drinker but family, friends, and other relationships as well.

Woman 3: I just didn’t want to live, I mean, my family and people that I love so much, I feel like they hated to see me coming and stuff and it’s something that I wouldn’t wish on anybody to go through.”

Boy: “I lost respect for myself and for others. And, mostly I just lost my family, my loved ones, you know the things I’ve always wanted to do in my life since I was little.”

Lynette: “It’s like going back over all of the things that you’ve done to your children, over the things that you’ve done to your family members, people who cared about you and loved you and wanted to help you get through it. You know I kind of turned my back on all of those people and just kind of left them for dead.”

Girl: “Its hard growing up in an alcoholic family ‘cause you have to, always be on their good side. It’s like, you, its like, you’re not supposed to say anything about their problem, its, its quiet, they don’t actually have a problem. You, you have to like, not get on their nerves, or always try and be the good child, or, just do good things so that they’ll say they love.”

On average, a child may be drinking or using for two to three years before parents recognize that there is a problem and overcome their denial.

Judy: “I look at my older daughter, and she was 17 before I really realize that there might be a problem with alcohol. I look back at my denial, there were signs for years that something was going on.”

Since alcohol abuse and addiction affect the whole family, any effective treatment program works better when the family is involved.

Judy: “As we progressed through the family program, I realized, that I had many, many issues myself, and it’s not only the disease of alcoholism with a person who has the addiction, but it’s with the whole family.”

STUDYING, SECOND-HAND ALCOHOL, GRADES

Chico kid: “You make sure you get your work done, you make sure you get all that squared away

and then you party. On Friday night most likely. That's why binge drinking is a big thing."

Chico kid: "I know a lot of people who when they first got here, myself included, we'd go out like four or five nights a week and that's cut back. I've been here for two years and that's cut back dramatically."

Charlie: "I guess studying on the weekends was a lot more difficult because a lot of people tend to party a little bit more, a lot tend to drink a lot more and, just a lot more rowdy. People banging on the walls, and, coming into your room, trying to get you to come out party with them."

Seanna Quinn: "Second-hand drinking is a large problem on a college campus and it is a problem on our campus. We have a lot of students complain about their roommate or their boyfriend or girlfriend you know being drunk, violence occurring, vandalism occurring, being unable to study."

Chico kid: "Secondhand alcohol? There's only one thing that has to do with secondhand alcohol, either you want to get your work done or you don't."

POLYDRUG ABUSE

Boy 2: "I can't really say what just beer done to me by itself, because I never really just drank beer by itself, I always did something else."

The incidence of polydrug use in the general population is quite high. A drug can be used to temper the effect of another drug, to magnify the effect, or for a dozen other reasons.

Norman: "Well I would get high off the methamphetamine then I had to have something to drink and stuff. I drunk vodka and stuff. That was my alcoholic drug of choice and stuff so the stuff just smoothed the edge and thing."

Eric: "Right now, if I had a drink...it'd be a drink for now but before the night is over it'll lead to drugs because it goes hand in hand."

College Girl: "I think it's just at the end of that NA thing was that, alcohol is a drug, period [in chorus]. You know, I just, I just don't see the difference myself like, the behaviors are the same. The, what leads up to it's the same."

DRINKING DURING PREGNANCY

Mother with baby: "I used after my water broke and I was on the way to hospital. I got high because I couldn't face bringing another child into domestic violence."

Angel: "When I was pregnant with her, and I was getting high, I mean, I could feel her getting all excited, and, you know, just moving frantically inside of me."

When a pregnant woman drinks alcohol or uses other drugs, the alcohol crosses the placental barrier and circulates through veins and arteries of the tiny maturing fetus.

Woman 3: "With my daughter, I was drinking like, two, I was drinking a lot and when she was born, um, I could leave the hospital but she couldn't because she shaked, they had to wrap her a special way."

Sarajini Budden, MD: "And they have to be sometimes woken up to be fed but their feeding difficulties are very similar."

The effects on the fetus can range from minimal to disastrous. The most serious effects are fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE).

Marcie: "Andy was a 26-week premature baby. He spent his first 10 weeks up at OHAS neonatal intensive care unit. He actually was diagnosed at birth with fetal alcohol syndrome."

Susan Astley, MD: "FAS is a medical diagnosis, and it's characterized by growth deficiency, unique set of minor facial features central nervous system dysfunction, or what you may refer to as cognitive or behavioral problems."

Marcie: "Why don't you take your glasses off for just a second, okay because there's some special things about how you look. The ears are at eye level or lower. Eyes are as far apart as they are wide which is part of the dysmorphology. The philtrum is kind of long and the nose is a little bit upturned."

Susan Astley, MD: "With fetal alcohol syndrome, and fetal alcohol effects. No two children have exactly the same type of damage, they all have different strengths and weaknesses, parts of their brain work, parts of it don't."

Marcie: "But his IQ's higher than his ability because he has no short-term memory, none. So for him to learn academics, he has to do it over and over and over again."

Mother: "I had no idea what we were getting into when he came. He was very inconsolable. He would take ten cc's of feed, he wouldn't sleep, he slept for maybe 15, 20 minutes at a time, 24 hours a day that's what we went through. And it was like that for a couple years."

Susan Astley, MD: "The clear problem with Fetal Alcohol Syndrome, Fetal Alcohol Effects, ARND, ARBD, the one thing these all have in common is brain dysfunction. And, and it can be equal among all of those."

Mother: "We're really proud of Amber because when she was in 3rd grade she was still an emerging reader which is something you do in the 1st grade and something clicked sometime after that."

Amber: "I like Miss Delman because she helps, and when I don't understand and she explains things to me."

Various studies have found one to three cases of FAS for every one thousand live births in the United States, about the same ratio as Down's Syndrome. The incidence of fetal alcohol effects is 5 to 10 times greater.

Mother: "He's not a hard kid right now to parent. He does get ornery sometimes and he'll like, kick Blain, or hit out at him."

A study was done in Oregon to examine the drug use of mothers who had children with FAS or FAE.

Sarajini Budden, MD: "We put it all together and said 89% of the women were using alcohol with two other drugs. Forty-nine percent of the women were using just two drugs. One was alcohol, and one was cocaine. But all of them were smoking. So, I, I include smoking as one of the toxins."

Angela: "I had been using for years before I got pregnant, and when I got pregnant I tried to stop, but I just couldn't do it. Um, I wanted the drug more than I wanted the baby."

Susan Astley, MD: "There was a tremendous mental health burden among these women. And that was actually quite unique from the general female alcoholic. All of these women had one, two, up to ten other health disorders in addition to their alcoholism."

Mother: "Wally's birth mom was severe alcoholic. She, I, I, I never got to really meet her, to sit down and talk to her, but I know that when she went into labor she was in a bar and had fallen off a bar stool. And she was so intoxicated, that they said that when Wally was born he reeked of alcohol."

Susan Astley, MD: "A woman who is drinking during pregnancy, the day she stops, is the day she stops doing further damage, and potentially being able to reverse some of that damage. The brain, as it's developing, has a lot of ability to overcome previous damage."

Andy: "I own, built this yesterday morning and it's kind of like, a speedboat type of thing and I have tested it once and it can actually float in water."

TREATMENT

In the United States, almost 43% of those seeking treatment by public or private programs list alcohol as their primary drug problem. This contrasts with 18% being treated for heroin or other opiates, 15% for cocaine, including crack, 10% for marijuana, and only 4% for amphetamines or sedative hypnotics.

Elizabeth: "I was really in a lot of denial. I was always thinking I was sick from something else or was too tired . . . I was sincerely in denial."

Boy: "I thought I would never have no consequences, I thought I was just do what I wanted to do and get away with it, you know."

Jerry Clark, CDAC: "Well generally we see some kind of external type of intervention that occurs, family members, employers, where there's a behavior change and people are beginning to notice. I'm told that in most alcoholics that there are generally about 11 interventions that occur before they can get involved with treatment."

Boy: "Started getting legal troubles, um, you know, every time like, I got through one thing it seemed like there was another one right behind it."

Gerard: "What happened at that moment I just said, man I'm in trouble, I'm in trouble. I can't stop. And I just was weeping, like a little kid."

Jerry Clark, CDAC: "People come in to get away from pain. When they feel enough pain then they tend to try and find relief from that pain and sometimes the only way they can do that is through abstinence and recovery."

ENTERING TREATMENT & DETOX

Mary: "I went into detox, where they put me on Valium to help me get through the withdrawal symptoms. I am prone to seizures, and was told if I had another one, I would probably not make it through. So the detox was, they watched me very closely for the first 24 hours. I was in detox for four days. It took probably two to three weeks to become oriented enough to even retain information."

Susan Tapert, Ph.D.: "The good news for people in recovery is that once these folks stopped drinking, there was significant recoverability in the first few months after obtaining sobriety and the recoverability was evident in their performance on cognitive tests as well as on brain

imaging.”

Jerry Clark, CDAC: “People need to make a lifestyle change and that’s a difficult process. But we know that that rate of relapse, as long as that person keeps coming back and working on it, don’t give up, that eventually they’re going to have long-term sobriety.”

Because of the limited availability and cost of treatment the mainstay for treatment of alcoholism for almost 70 years has been Alcoholics Anonymous, a spiritual program whose core is a 12-step program that helps people change their lifestyle.

Mary: “Alcoholics Anonymous has printed published Alcoholics Anonymous Big Book which I study every day, and this provides me with information, stories of other people that have had the same problem and how they’ve overcome it; how to help others when you see them in trouble and how-to approach and deal with their pain.”

Jerry Clark, CDAC: “I love to see people come in and get what they need with a therapist counselor to get a better understanding, kind of a jump start on recovery and then follow up with the 12-steps. Get involved with a sponsor, make friends in recovery.”

RELAPSE

Ray: “I still think I’m very vulnerable because I can, I can smell it... I mean if it’s...and you get that urge.”

Woman 3: “Where you could stop drinking, for I don’t care 10 or 20 years, and then you start back it’s just like you never stopped at all, it’s like you’ve never stopped.”

Marc Schuckit, MD: “Most alcohol dependent people or drug dependent people when terrible crises occur, they can stop. Their trouble is staying stopped and their problem is there’s something different about them, so when they go back to use, maybe it’ll the first or maybe the thirtieth time they use, but you can bet money that one of these times that they use they are not going to be able to stop and problems are going to develop dramatically.”

Woman 2: “That last time I relapsed, before this, I was sitting on a couch in my living room, with no thoughts of drinking, I had been going to meetings and I just got up and said “I’m going to go get something to drink,” and went to the liquor store and that started me on a run. Just like that, just came out of nowhere.”

Jerry Clark, CDAC: “The process for relapse prevention is having more of an awareness of what those environmental cues are and so they can gain some understanding and that occurs they have to take some type of specific action to avoid the chemical relapse.”

RECOVERY

Lynette: “I used to feel really sorry for myself. I used to feel a lot of self-pity. Just think, ‘Oh poor me.’ I played the victim a lot. Really played the victim. Today I know that I’m not a victim, I’m a survivor.”

Boy: “Its all of a matter if I want to get it back, and right now I’m at the point where I do, you know, I’m gonna do whatever its gonna take, so I can go out there and stay sober, and just live a normal life.”

Girl: “If I were like to design like, my own treatment center, it would probably be, um like with the technology we have, it would be see yourself in ten years, where you’d be if you kept using. You know you’d see the consequences. You’d see family members leaving you. You’d see, you know,

relationships ending, you'd see no money, you know, by yourself, it, basically, you'd be able to see what would happen if you don't stop now, you know."

THE END

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