

Medical Consequences of Addiction

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William: "Sugar diabetes, I have asthma, I have seizures, I have high blood pressure, I have a heart murmur. I complicated all these things using drugs."

Tyler: "From the use of ecstasy my heart is permanently damaged for the rest of my life. Its shrunk back down to its normal size for the past couple of years but if I am not, by the time I am 25, I am supposed to get a heart transplant."

Colleen: "I went in the hospital and I was drunk when I went in and then the doctor tried to talk me into staying and told him, I said okay and then I got up and left because I wanted to drink some more beer and then I could hardly breathe so I came back. And the next day my lungs collapsed and I was in a coma."

It is estimated that 40 to 60% of all hospital beds in the United States are occupied by the medical problems associated with substance abuse and the disease of addiction ... not the psychological and emotional problems but the medical consequences. There are 72 major medical illnesses in which substance abuse, in all of its forms, is the primary contributor.

Inaba: "The part of addiction that's most difficult is a process called denial. And in denial the addict is not looking at how the drug is harming themnot only in their social life, their criminal lives, accidents, things like that but also the diseases and the illnesses that are brought about by drugs."

Tyler: "I was in denial over my heart problem. I didn't want to believe that I died for 16 seconds. You know, I'm not like a normal kid anymore. etc."

Some hospital beds are filled due to the short-term consequences of heavy drug use such as blackouts, overdoses, and miscarriages, but many more are filled due to the effects of prolonged use with cases of cancer, heart disease, respiratory problems, and liver failure in abundance.

The key definition of drug abuse and drug addiction is continued use despite negative consequences.

Charlene: "I've smoked since I was about 13. I am still smoking unfortunately. I am hoping to quit. I do have congestive heart failure and pulmonary hypertension."

The continued use despite emphysema, despite heart problems, despite cirrhosis of the liver, despite breathing problems is baffling to users and nonusers alike.

Doug: "I always thought I could lick it. I have been in the health care profession myself for a lot of years and thought you know, 'That's not me over there, you know. I am not there yet, and of course the last word in that sentence is yet.'"

Tyler: "I just didn't care about life. Life didn't mean much to me. I just cared more about getting high and having fun."

Lyneoe: "I have to take this cause I have no more immune system since I sobered up." The purpose of this video is to help users and nonusers understand the scope of the long-term physical consequences of abuse and addiction.

REASONS FOR MEDICAL CONSEQUENCES OF DRUG ABUSE

It's not just the direct effects of drugs that can cause health problems. Of equal or perhaps greater consequence are the METHODS OF USE and DRUG USERS' LIFESTYLES.

METHODS OF USE

In terms of serious medical complications, intravenous drug use, inhaling smoke or vapors, and ingesting alcohol are the most damaging.

INJECTION

By using needles to inject drugs, whether into a vein, into a muscle, or under the skin, natural protective barriers are bypassed

Rick: "Obviously using needles is a very good way, it's the only way, it's the best way, some say the only way to transmit the HIV virus and the HCV virus both."

Dr. Amodia: "The problem with injection drug use is that you are introducing bacteria into your blood stream every time you are injecting the drug and cooking it does not disinfect. A lot of people are under the impression that applying heat to the cooker disinfects. The heat is not high enough nor is the drug exposed to it long enough."

Substantial damage can occur at the point of injection particularly with continued use.

Kathleen: "I have seen people that have had abscesses in both biceps, both breasts, both thighs, fist size and they have cut that out and it just leaves a big hole, literally a hole"

that they pack, and are on heavy duty antibiotics for a month or so."

The most common abscess infections are the staphylococci and streptococci bacteria. A nasty variant commonly known as flesh eating bacteria, which gets under the skin and infects the user down to his fascia and muscles, is being seen more often in recent years.

Bonnie: "It just started eating the whole inside real fast. The first time I looked and seen how deep it was here I couldn't believe it. It was horrible! Even after this I stock needles in me and came here to my counselor Steve at methadone and cried and said 'I am horrified that after that I still did it.'"

Dr. Silvestri: "We see a rainbow of potential infectious illness related to needle use. And that is one of the reasons that we spend so much time trying to get people to stop using needles."

Unfortunately the old brain's craving for the intense rush that IV drug use provides releases adrenaline and other neurochemicals. These sensations override the sense of danger and common sense available in the prefrontal cortex of the new brain.

Dr. Smith: "'The old brain craves for what they fear and in fact the new paradigm for understanding addiction is, 'Addiction is a drug-induced dysfunction in the reward system of the brain.'"

INHALING

The second most toxic route of administration is inhaling or smoking drugs.

Dr. Amodia: "Lining our airways are mucus ciliary type mechanisms, little cilia that can sweep in the airways and when you smoke, it paralyzes those cilia so you have no mechanism by which you can sweep debris and infections and things from your lungs."

Dr. Tashkin: "Here we see a microscopic section of a tissue obtained from a healthy subject. These are normal, ciliated epithelial cells. In contrast, this is a section from a marijuana smoker. See these abnormal cells. Here's a marijuana plus tobacco smoker. Normal cells are completely destroyed and replaced by disorganized cells. This would be an example of squamous metaplasia or dysplasia and might be a precursor lesion for the development of lung cancer."

INGESTION

The medical complications that occur with psychoactive drugs when they are swallowed have more to do with the drugs reaching the blood stream and causing systemic effects. Alcohol, the main exception, has direct irritant effects on every part of the digestive system.

Girl: "Six hours into my drinking, I was, in the bathroom, like by the

toilet all night long, I couldn't leave, every like umm, probably every minute I was throwing up, and when I couldn't throw up, I was dry heaving. And umm, at the end when I wasn't throwing up anymore, I wanted to drink again."

Systemic effects such as avascular necrosis, though much more commonly induced by steroids, can occur due to long-term alcohol abuse.

Tony: "The alcohol caused the cartilage in my hip to degenerate and then the hip collapses cutting off the circulation to the femur bone, which is your upper leg bone and the head of it dies. I had my first hip replaced at 40 years old. Two years later I had to have my right hip replaced."

DRUG USER'S LIFESTYLE

The main lifestyle problems that often accompany addictive drug use and can lead to health problems are poverty, crime, unsanitary living conditions, malnutrition, and high-risk sexual activity.

Michael: "When I was using, I didn't even notice that I had something physical wrong with me and if I did, everything is secondary when I am using to my drug use. If I had time, if it was convenient, OK."

Chronic drug users are often in financial crisis and have no medical insurance. Untreated minor illnesses and infections can fester and the medical problems can multiply.

Sam: "I don't know how I got it but there was a sore on top of my toe that wouldn't heal for almost a year. Then it got infected real bad and the infection started going in the bone and they said there was nothing they could do about that. No antibiotics will kill that, nothing, so they had to take it off."

MALNUTRITION

Malnutrition often accompanies drug addiction.

Lynette: "When I sobered up I was only 65 pounds. I was skin and bones when I came into treatment here."

There are several ways that compulsive drug use can cause malnutrition. For example, cocaine and amphetamines depress appetite making the user indifferent to food. These before and after pictures of methamphetamine abusers emphasize the dental, hair, skin, and weight-loss consequences of excessive use.

Another example is alcohol which has mostly empty calories sometimes causing primary malnutrition leading to beriberi, heart disease, peripheral nerve degeneration, pellagra, scurvy, anemia, and in very serious cases, to brain

syndromes called Wernicke's encephalopathy and Korsakoff's psychosis. A third example is diabetes which can also be aggravated by malnutrition and can have direct effects on the kidneys.

Dr. Amodia: "The blood vessels servicing the kidneys become so impaired by poorly controlled diabetes that we see people developing slowly, a form of chronic renal failure and eventually the need for dialysis."

Pablo: "The amount of drugs that I was taking every day. I didn't think about my diabetes, knowing that I have it and I didn't take care of it."

It is important to note that malnutrition also includes overeaters.

Cinnamon: "Well, I have diabetes and I am a foodaholic, that's another addiction which is very hard to beat."

Fred: "I have all the classic side effects of obesity including diabetes, arthritis, joint problems, lower back problems, high blood pressure, lack of mobility. That's been my biggest problem the last couple of months. The swelling of feet and legs which after it's been chronic for 5 or 10 years it turns into lymphodemia."

(plays the Piano)

Fred: "All the warnings, all those intimations of impending doom, all these things tend to build up io the shell around you Food is there as a drug to change your thinking so as we see a lot with obesity is that people just die off rather than obtain the benefits of weight loss and recovery."

HIGH-RISKSEXUAL ACTIVITY

High risk sexual activity can lead to a number of sexually transmitted diseases such as herpes, hepatitis B, pelvic inflammatory disease, syphilis, and HIV disease or AIDS.

Rick: "The pleasurable effects of the drugs would override my, any thoughts of safety and this is probably even continued, well continued up to the point where I got infected. I did cut things down but it was still too late."

Drug use induces high-risk sexual activity two ways.

- **First is that most psychoactive drugs lower inhibitions or make users less sensitive to the consequences.**
- **Second is that drug use is expensive and the compulsion to continue use will force a user to do almost anything to raise money for their habit**

Michael: "You can do absolutely do things that you would not do if you were sober. You know like one night stands or sleeping with guys or whoever it is, for the money you need

to get to fix and because you are sick it doesn't matter and you do whatever it is anyway, condom, no condom. Weird stuff"

High-risk sexual activity is more dangerous for women than for men. The dangers are particularly rampant amongst African-American women who account for 73% of new cases in women.

Dr. Luce: "The people who are substance users are more likely to get sexually transmitted diseases. That is very solid data. Cervical cancer and anal cancer are sexually transmitted diseases and they are clearly higher occurring in people who are substance abusers, without question."

PHYSIOLOGICAL CONSEQUENCES

To study the direct effects of the drugs themselves, it is helpful to examine the diseases of chronic and excessive drug use on a system by system basis.

SYSTEMS OF THE BODY The 11 major systems of the human body are

- the cardiovascular system:
- respiratory system:
- digestive system:
- nervous system:
- integumentary system:
- lymphatic system:
- endocrine system;
- urinary system:
- reproductive system:
- skeletal system:
- muscular system:

NERVOUS SYSTEM

The nervous system helps us think, receive sensory impulses, and coordinate body systems. Alcohol and many inhalants can damage or kill nerve cells on contact and since nerve cells are so slow to regenerate, if at all, damage is long lasting.

Dr. Hill: "Exactly what I have is called atrophy of the cerebellum which is ... the cerebellum is the back part of the brain that goes into your spinal cord back here, that has to do with coordination and balance and that type of thing. Because of my drinking for probably 20 years has caused it to shrink. That's what atrophy means. It's going away or whatever and so that I don't have very good balance or very good coordination, particularly in my legs."

Drugs and alcohol are particularly toxic to the nervous system of a developing fetus. In fact the biggest cause of mental retardation in the United States is heavy alcohol use during pregnancy. The most serious condition is fetal alcohol syndrome or FAS that manifests itself in neurological impairment and facial anomalies.

Mother: 'This is my 5 year old. I drank until I was about six and a half months pregnant with him. He's gone to get an assessment.'

Many of the consequences of drug and alcohol use during pregnancy are not as obvious and may not become apparent until the child is 2 years or older.

CARDIOVASCULAR SYSTEM

The cardiovascular system, the heart, veins, and arteries, transport blood, nutrients, oxygen, and other substances to every system of the body, It is also the system most affected by drug use in terms of chronic illnesses and death.

Dr. Inaba: "Endocarditis, weakening of the heart muscles, we have basic vascular diseases and a tendency to have aneurysms and strokes."

People usually don't think that their current use of alcohol or other drugs is dangerous because heart damage often takes years to develop. High blood pressure is one of the warning signs of the potential for heart damage, especially with stimulants.

Dr. Amodia: "Methamphetamines can create the blood vessels to contract, It closes the lumens of your arteries and what it can do to the heart is it can actually decrease the blood supply to the heart thereby decreasing the oxygen to the heart so it can actually cause muscle damage."

Initially though the symptoms aren't obvious. When they are apparent, the dangers are imminent.

Michael: "I was getting headaches, a lot of headaches, feeling faint some times and whatever, dizzy. And I guess that is when my blood pressure went up. And my blood pressure went way up, it didn't just go up a little bit it went way close to stroke kind of."

Strokes or heart attacks are also consequences of continued use especially when one's health is already in jeopardy.

William: "I had a stroke about six months ago because of the use of heroin and cocaine. I had a stroke and my right side was paralyzed. I couldn't move my right side."

Heavy alcohol use causes heart damage by slightly different mechanisms than that caused by stimulants.

Dr. Amodia: "You start getting a sluggish heart, a heart that's not moving the blood forward and giving the brain and supplying the rest of the body with the amount of blood-carrying oxygen that it needs to function."

The biggest danger to the cardiovascular system is from cigarettes. 400,000 smokers die prematurely in the United States each year with the majority of the deaths being from cardiovascular complications.

Glantz: "The minute you breathe that smoke in you are filling your blood up with carbon monoxide, you are breathing in chemicals that are making your blood stickier, increasing the chances that you will get a blood clot which if it lodges in an artery in your heart that is called a heart attack. If it lodges in your brain that is called a stroke."

Charlene: "the doctor told me that I needed to stop smoking. She got very angry with me because the flow line wouldn't work. And that's the name of the medication that goes into my heart. It has worked and I am still smoking. I am going to counseling to see why I can't seem to let go of that last cigarette."

Glantz: "One of the broad misconceptions that is out there is that it takes 20-30 years to develop a smoking related illness and once you stop it takes 20 or 30 years for it to go away. That's not true. It's true for some diseases like lung cancer which develops very slowly and resolves very slowly but it's not true for heart disease. If you quit smoking your heart's working better the next day. Half the excess risk of a heart attack is gone in a year."

Technician: "Okay, a two-chamber view."

A large number of cardiovascular problems occur when any drug is used intravenously. The most common infections are cotton fever, septicemia, and endocarditis.

Kathleen: "Well with endocarditis infection and pus gets on the heart valves. They most often try and treat that with the IV antibiotics. If it is so severe that it results in heart surgery, they do open heart surgery and I know in my daughter's case they repaired one heart valve and they replaced another with a pig valve. She started using when she was 24, using heroin, got sick when she was 25, and died when she was 27."

RESPIRATORY SYSTEM

Bunon: "I had to be hospitalized four weeks ago because I couldn't walk 25 feet without sucking air and breathing, gasping for air."

The respiratory system exchanges oxygen and other gases between the external and

internal environments. Due to the complexity of respiration, the lungs need many ways to protect themselves from particulate matter and toxic gasses in vaporized substances and particularly in tobacco smoke.

Stan Glantz: "It is just a witches brew of toxic chemicals, and those chemicals act to cause cancer, to cause heart disease. When you are a smoker you are basically breathing in a flame thrower."

Tashkin: "We see the bronchoscopist with this flexible fiberoptic scope in his hand. The subject has been lightly anesthetized and he is not completely unconscious."

Any insult to the lungs from smoking tobacco, marijuana, or crack will set up the smoker for a number of respiratory illnesses. The most common are:
Bronchitis, chronic obstructive pulmonary disease, pneumonia, emphysema, and cancer.

Cinnamon: "And your breathing gets worse and worse and you just can't get air to fill up in your lungs, most of the time it feels like you can't suck air past your throat. And I have a buteral inhalers and a nebulizer machine I have to use with buteral in it when I am really not breathing well and I need to quit smoking."

Emphysema is almost always caused by cigarette smoking. It damages the structure of the alveoli which are thin and fragile. Damage to the alveoli is irreversible and results in permanent holes in the tissue of the lungs. As this happens less and less oxygen gets into the bloodstream.

Burton: "The most important thing is shortness of breath. If get much shorter I will certainly die and it is going to be soon if I don't stop soon."

Glantz: "You know there is a myth out there that if you try to get somebody to quit smoking at the same time that you are trying to deal with heroin or cocaine or some other drug that that makes it harder. And what the objective evidence is just the opposite. Dealing with smoking at the same time seems to help with getting off of these other drugs."

DIGESTIVE SYSTEM

Drugs can affect the digestive tract at every point in the system.

Drugs can cause diseases in the mouth where substances such as tobacco, alcohol, and inhalants come in contact with delicate mucosal tissues.

- **Drugs, particularly alcohol, can inflame the esophagus and stomach, causing ulcerations and occasionally cancer.**
- **The site of most long term damage in the digestive system from drug use is the liver.**

Often though, in the early stages of liver disease, only specific tests such as a biopsy can tell the scope of the disease.

HEPATITIS & CIRRHOSIS

Dr. Silvestri: "There are over 100 causes of hepatitis. The most common cause of hepatitis in the United States is alcohol ingestion and so drinking excessive quantities of alcohol actually inflames the liver and causes alcoholic hepatitis."

Viktor: "I had cirrhosis. My liver is inflamed. It's located right here and it's inflamed and I had a biopsy done approximately two months, a month and a half ago, and they found cirrhosis along with the hep C."

Alcoholic hepatitis occurs in 10-35% of heavy drinkers. The precise toxic actions of alcohol on the liver are not known but over time the inflamed tissues becomes scarred and die. This process of scarring is known as cirrhosis. A cirrhotic liver cannot function adequately and kills between 10,000 and 24,000 people in the United States each year.

Charlene: "Because I knew that I was near death, I did stop drinking. I went through about 11 days of DTs and everything else but I quit and I've remained clean and sober for the last 4 years. It's been the best time of my whole entire life."

Hepatitis C is an epidemic and it is spreading 5 times faster than HIV. At least 170 million people world wide suffer from this disease. Over 4 million Americans have Hepatitis C and an equal number has been projected to become infected within the next 10 years.

Dr. Silvestri: "Cirrhosis and liver cancer are the two dreaded consequences of hepatitis C. Fortunately they are both relatively rare. After 20-30 years of having hepatitis C the chances of getting cirrhosis is really only about 15-20 percent. Once you get cirrhosis, that's when you become at risk for developing liver cancer."

Dr. Ann Avery: "In this cirrhotic liver, we have the development of hepatocellular carcinoma or cancer of the liver. You see two large nodules here and here which represent the hepatocellular carcinoma."

Hepatitis C is a life threatening disease but with the new medications, specifically interferon and riboviron, patients have a chance for remission and even a cure.

Cinnamon: "I had hepatitis C. They say you are not supposed to say cured yet but I have had no virus in my system for a year, 2 years and six months,"

Dr. Silvestri: "55% of people who take interferon and riboviron treatment nowadays with a long-acting interferon called pegylated interferon clear the virus through the treatment"

and appear to probably be cured."

Michael: "I had hepatitis B years ago when I was 18. I am 55 now. A couple of years ago I was diagnosed with hep C. So it just seems that like my drug use doesn't do anything but add to the problems instead of doing what I thought what it was supposed to do in the beginning which was make me feel better."

PANCREAS

Alcohol can cause an inflamed pancreas.

Sam: "For one month I was in a coma in here. I had pancreatitis. Then they told me to quit but I didn't. I mean I started drinking again, boom, that's when the big one hit. ... I don't know what they did inside me. (They put a shunt in your pancreas) Yeah, cause they said it was eating ... what do you call those juices? eating my pancreas up on the inside."

Because the pancreas is sensitive to alcohol, when a person drinks too much, the pancreas stops working.

Dr. Amodia: "there is no more insulin being secreted by the pancreas so then we see all the complications that go with diabetes:"

LYMPHATIC SYSTEM

The lymphatic system is a component of the immune system which helps fight infection. Drug use can affect the immune system in a number of ways including the direct effects of drugs, malnutrition, and the presence of other infections.

Dr. Amodia: "There are many, many factors that impact the immune system. Yes, stress alone sets people up for getting a number of infections. We do see a lot of bronchitis, pneumonia in individuals who are chronically using drugs."

Dr. Tashkin: "There is epidemiological evidence that cocaine is a risk factor for progression of AIDS; in fact the data for cocaine are stronger than the data for marijuana. Also cocaine has been shown to increase the rate at which HIV divides, replicates, in human cells in culture."

The HIV virus which becomes AIDS, is often transmitted by IV drug use. It is a disease of the immune system.

Rick: "So here [am down here letting these thoughts wash over me as it were, looking at symptoms and things like that going, "Well this is not very good."

Courage to Change

Michelle: "Whatever comes my way, I can deal with it. I would rather deal with it than to deal with addiction I had in my life!"

With all the problems that can occur 10 every system of the body from long-term abuse of drugs and alcohol, the question becomes more urgent, 'What does it take for a person to quit?'

Doug: "It got me almost to the point of death. No thank you. It had to take that to make me realize that I don't want to be there anymore. I just don't want to be there."

Some begin to recover when they start to hear the concerns of loved ones.

Renette: "'Mom, you want to really die or do you want to just give up like that and just die? You know, I can't loose you: And I said, 'Yeah, you're right, you're right, you are absolutely right."

Others are able to harness their anger to create positive thinking.

Charlene: "I went through a lot of changes over being angry because I had gone through such a battle to get rid of hepatitis C and to quit using and drinking and I thought that this was just a really bad blow. Took me almost 8 months to get over it but I never ever gave up. I always believed that I would get better."

For many, fear is the motivating factor as the health problems multiply.

Michelle: "I got word one day that I might not be around too much longer if I continue to not try to get some type of medical help. So they signed me up with the doctor and I started continually to go to him and continued to see him, and to take medication for my diabetes and heart or whatever."

Tyler: "I try to live life to the fullest and take things day by day because if you try and think about the future too much and what you are going to do you are going to get caught up and lost."
Abstinence from drugs and alcohol is absolutely necessary for full recovery. Recognition of the long-term effects can help that process.

William: "I know that my health can't allow me to use drugs no more. My health won't allow to use drug no more. I am trying learn how to live clean and sober."

Healing, in the long run, is not just a physical phenomenon.

Dr. David Smith: "We say in recovery is that first you get sick spiritually, then psychologically, then physically and recovery goes physical, psychological, and spiritual. So brain healing has to follow

the steps."

Doug: "The bottom line is I had to ask for the help and go get it. It wasn't going to come to me. When I started doing that, then things started falling in place and the more clear of mind I became the more I realized; 'Hey, I had those chances before. I had better not lose this one up.'"

Blondie- "If I were to design my own treatment center; it would probably be with the technology we have. You see yourself in 10 years where you would be if you kept using. You know, you would see the consequences, you'd see family members leaving you, you'd see relationships ending, you would see no money, by yourself. Basically you would be able to see what was going to happen if you don't stop now. Because you don't really notice it especially when you are a teenager cause you keep thinking I am supposed to be using. This is what is supposed to be happening with me. It is just. I'd make it so you'd see what is going on and not what your brain thinks is going on."