

**Physiology & Psychology of a DUI Script 2-25-13 Length 16:00
(Don't use clients names in translation or online)**

Physiology & Psychology of a DUI

**Presented by
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Ryan "You know, I didn't feel impaired. I passed the sobriety test. I didn't stagger, didn't stumble off the line. I could say my ABCs, talk clear as day. But, I could feel it."

Claudia "I don't remember even leaving the bar so I can't tell you what my vision was like. Obviously, it wasn't good if I crashed into a garbage can and went in backwards. I'm sure my sense of proportion and distance was off."

Most Psychoactive drugs affect a person's driving skills by their influence on the body's nervous system, particularly the brain and spinal cord (called the central nervous system), which in turn controls specific organs and tissues.

Stephen: "Even though I think I'm driving really good, I notice that I'm veering out of the lane. My speech is just slurred."

Ryan "When you're drunk, you're only focused on where you're going, what you're doing, what you want to do. You're not worried about whose life you could hurt."

In addition, many psychoactive drugs affect organs and tissues directly on contact . . . most often muscles in the heart, lungs, limbs, and eyes.

Juan "He noticed that I had blood shot eyes, I was really red . . .and when I got closer to him when I was trying to talk to him he could smell alcohol on my breath."

**Specific areas of the brain and spinal cord control
vision,
balance and coordination,
speech,
hearing,
breathing,
heart rate and blood pressure,
judgment,
alertness, and
memory.**

Girl: "It started out just alcohol and then about a year into being 21, I started with the prescription drugs. I would take like a Vicodin because I'd get drunk quicker or recall, like we would be a cheaper date if we took a pill and then, you know, did it?"

In regards to impaired driving, alcohol is almost involved and easier to spot. This simulation shows the cumulative effect of increasing amounts of blood alcohol on a drinker's brain.

Bar patron to newcomer: "I haven't seen you since . . . yesterday."

New patron: "Yeah well, things are going pretty well."

Initially inhibitions are lowered and the person can become very active and social...

New Patron to other patron: "Played any golf lately?"

**But then, muscles start to relax...
there is a decreased alertness...
a loss of coordination follows...
and reaction time slows...
Unsteadiness while standing or walking becomes common....
hostile behavior can ensue....and
emotions become exaggerated....**

Bar Patron: "Oh they're a bunch of idiots."

Speech is slurred,

Bar Patron "Mumbles."

**And there is an inability to walk without help.
Speech becomes confused and
incapacitation can follow with a
loss of feeling,
difficulty in rousing,
life-threatening unconsciousness and coma, and at high blood alcohol levels,
death from lung and heart failure.**

Ryan "You know when I first started really drinking...I'd start at a 6-pack and be on my lips and by the time I was done, you know, I could power through an 18-pack and thinking, do I really want to try to drive to the store or not?"

Physical Effects

It can be helpful to examine how specific body functions are affected by alcohol and drugs in order to understand their overall impact on driving.

The brain's cerebellum at the top of the spinal cord coordinates all muscle movement. Alcohol can disrupt the smooth functioning of this old-brain function

Stephen: "I was out of control of my body. I couldn't keep the car on the road. I ended up in the ditch a couple of times. Yeah, there is no hand-eye coordination."

At the junction between nerve cells and the muscles, the neurotransmitter acetylcholine causes the muscle to contract. Alcohol increases excitability directly, inducing a greater electrical charge to cross the junction, causing jerky movements.

Greg 2 “Oh, I remember one time I had a flat tire when I had been drinking and it must have taken me an hour to change the damn tire cause I kept falling down. I couldn’t get the car jacked up. The lug nuts kept falling off.”

As the depressant effects take over, the movements become sluggish and even non-reactive.

Patrol Officer “I may ask you for your driver’s license and I smell intoxicants on you, and the longer it takes you to get that driver’s license out.....You’ve gotten that driver’s license out a thousand times when you were sober and you go right to it and this time you’ve had two or three drinks and I point it out to you...there’s your driver’s license and then you can’t get it out because your fingers aren’t working.”

The same is true for other depressants, particularly prescription opiates including methadone, Vicodin, and Oxycontin as well as benzodiazepines like Xanax. When drugs and alcohol are taken together, the effects can be particularly severe.

Dr. Darryl Inaba, Pharm.D. “The liver is the primary detoxifying organ of alcohol and it’s busy trying to metabolize and breakdown the alcohol. But when you add in benzodiazepines, alcohol, or an opiate, or even a psychotropic drug of any sort, then the liver gets overworked and so what happens is the action of both alcohol and the other drug you’re taking are greatly exaggerated.”

With depressants, the time it takes for a sensory input, such as a visual warning sign, to register is delayed so reaction time is slowed. Unfortunately, one extra second of delay translates to an extra 88 feet of travel at 60 miles an hour

Ryan “I don’t know how many times I’ve almost had to slam on my brakes because I was...came too fast...you know. Car in front of me...I would have just blew it out in the intersection. You know, I just got lucky.”

Normally, the eyes flit from object to object four to five times a second looking for danger. With too much alcohol or drugs, that number can drop to one a second or one every two seconds so many dangers can be missed.

Chester “My reflexes...you know, it would take awhile for if I would see something before I would actually, you know, the motor function to do what I needed to do. But I guess I just didn’t care.

This is crucial because driving is a divided attention task where the driver has to coordinate several tasks including speed, weather conditions, road signs, and other drivers.

Patrol officer giving test: “First thing I want you to do is watch the tip of my pen. When you do this, I don’t want you to move your head, only your eyes. Do you understand that?”
Arrestee “I understand that.”

The eyes are the early warning system for impairment and for that reason a series of tests and observations for these delicate organs have been developed to detect drug and alcohol use.

Training Officer: "We rely on what we call HGN or horizontal gaze nystagmus. Nystagmus is simply the jerking of the eyeball...that's what it means. So when we talk about horizontal gaze nystagmus, we're talking about the jerking of the eyes that goes back and forth in a horizontal plain."

GREG 2"I suppose there were times when I would say to myself like, 'Where did that car come from?' You know, like when you're driving on the road and they become close to you."

Kathryn "Drinking slows you down and it impairs your side vision so if anything happens like a little dog runs out or a cat, you can't stop in time, you probably don't even see it."

The effect of marijuana on eyesight is debatable. At higher doses, it affects the ability to track an object with one's eyes and impairs skills requiring eye-hand coordination.

The medulla controls heart rate. As more alcohol is imbibed, the heart slows down and less blood is pumped to various parts of the body while blood pressure increases possible leading to dizziness.

Ryan "You know, every time you'd see a car, your heart races, you know, lock up. I mean, you have tunnel vision. You're not aware of what's around you at all. You know, you're one-track mind."

At high doses, a person can experience anything from a confused state of mind, extreme respiratory depression, seizures, coma and even death. Alcohol poisoning is most common with binge drinkers.

Marquis: "The first night I was to go up on stage I drank so much what you call liquid courage. But I got so drunk that when I went to the bathroom, sat on the toilet and I passed out and didn't even go up on stage."

Stephen: "The last several times I drank and would up in the hospital in the DTs, the doctor said, now if you drink again, you maybe have a week, but that didn't stop me."

3 months after this interview was shot, Stephen died.

MENTAL EFFECTS

A crucial part of the brain that is disabled by alcohol and drugs and distorts judgment is the prefrontal cortex, the heart of the reward/control circuit.

Kathryn "The first drink sort of relaxes you and you just sort of feel this warm feeling all over,"

Alcohol affects certain neurotransmitters that control inhibitions, especially one called GABA. This process disrupts communication between the thinking brain and the emotional brain so the drinker is more likely to act any way they feel and say anything that comes to mind.

Ryan “Right off the bat, your judgment goes. And so as soon as that’s gone, you feel like you can do anything. Alcohol gives you that ‘I’m a better driver. You know, I’m a tougher guy. I’m a better talker. I’m a better looker. I can drink more. I can jump higher. I can run faster.’”

Concentration & Alertness

The disruption of communication between the new thinking brain and the old feeling brain makes following a line of reasoning more difficult.

Kim “Like being at a 4-way intersection. I would get really confused on who was next, who was there first, you know, things like that.

Whether due to eating and driving, talking on the phone, and especially texting, distracted driving has become an increasing problem.

Patrol Sgt “The more tasks you put in front of yourself, the harder it’s going to be to control those tasks. You add alcohol or drugs into that mix, it’s going to become even harder.”

Alertness is not only affected by depressants such as alcohol, OxyContin, or even excess carbohydrates, but also by overuse of stimulants which deplete adrenalin and other energy neurochemicals.

Patrol Officer “If you go without sleep for let’s say 20 hours, you’re equivalent to a 0.08 as a DUI. You have the same slowed reactions. Your thought process is slowing down.”

Drugs like marijuana, methamphetamine, and cocaine artificially over stimulate the fright/fear center of the old brain so even a moving shadow or strange sound seems much more threatening than it really is.

Josette “Yeah, I’m really distracted. I’m like paranoid looking for you know...checking to see if I’m being followed. Who’s behind me? Who’s in front of me? Who’s passing me?”

Some drugs such as methamphetamine and steroids can induce anger on their own by stimulating the fight center in the old, emotional brain, while others like alcohol can magnify existing resentments and conflicts

Tony “But, the most dramatic ticket I had, a police officer had cut me off and it was about 7:30 in the morning and I chased him for a good 2 miles, chased him down. And it wasn’t until he pulled over in the middle of an intersection, came out at gunpoint that reality had set in for me that what the hell are you doing, you know. That’s the worst incident I had ever went through under the influence of alcohol.”

Girl “There’s a few times that I had gotten home and didn’t even know how I got home and how I got into bed and my car was out front and my keys were on my nightstand.”

The reason that many people do not remember what they did when drunk or loaded is that alcohol, and many other drugs, interfere with one’s memory, mostly via the hippocampus in the older brain.

Steve “I remember waking up one time from a blackout and being on a rail, on the guardrail and sparks were coming up off my van and I just grabbed the wheel and yanked it over.

Memory impairment contributes to the odds of getting another DUI. If we don't remember the damage we caused or the dangerous things we did when driving intoxicated, we will most likely do them again.”

Chris “I don't really think I have the mentality of “it's never going to happen to me again” because I know that I always have a relapse left in me It's just whether I choose to act upon it. And today, I just choose not to.”

A final thought

Dr. Darryl Inaba: “The thing about psychoactive drugs is they work on the brain and the brain controls everything you do as well as everything you perceive and everything you're aware of and so psychoactive drugs like alcohol and other drugs can greatly impair your coordination and everything you're doing, but at the same time they change your perception and you may think you're generally doing very well, and you're coordinated very well but because they've altered it, and your behavior is also altered by your perception, you may not be doing things very well at all.”

CREDITS