

## Addiction Science and News: What's the latest? Facts, Figures, Dangers

Dr. Stephen Dewey is a neuro scientist and addiction psychiatrist who has spent the greater part of his lengthy career visiting high schools on Long Island speaking to students and parents about the dangers of alcohol and drug use on the still developing adolescent brain. Dr. Dewey also brings his evolving presentations to medical and clinical practice groups including the Long Island Chapter of the Employee Assistance Professionals Association just last week.

Dr. Dewey's acclaimed work and research involves the use of brain imaging with Positron Emission Tomography (PET scans), which are used to show activity and functioning in the body at a cellular level; and in his work specifically changes in the brain. Researchers tout the beauty of a PET scan machine is that it can show what's actually happening within your cell structure.

Dr. Dewey's work focuses on addiction being caused by an increase in Dopamine a neuro- transmitter in the brain. In everyday life if we experience something positive we feel good about it and our dopamine levels increase naturally by about 4% to 5%.

We know that the use of mood altering chemicals has a major impact on dopamine levels. For example caffeine increases the dopamine levels in the brain by 120% and at the extreme, methamphetamine (the most addictive drug studied) has been identified as boosting dopamine levels at a mind numbing 900,000 to 1.2 million %.

In a related discovery, 92 % of a recent PET scan group of young people tested positive for methamphetamine yet when questioned almost all of the subjects reported that they never used methamphetamine. This alarming development led to the discovery that the marijuana they are smoking was being laced with the incredibly addictive drug unbeknownst to the young marijuana users. Combine these findings with the perhaps surprising rate of high school seniors who acknowledged using THC/marijuana this past year (72%) and there is clearly cause for concern.

(Notable dopamine rate increases for other drugs: Cocaine 300,000-400,000% and Heroin 650,000%).

- It is widely believed and still circulating in addiction treatment circles and amongst the recovery community that no form of illicit drug use is safe in today's world, including marijuana. Nearly all illegal drugs including the powdered substances (heroin, cocaine etc.,) and all kinds of compressed pills (ecstasy, oxycodone and the like) and marijuana too have unknown additives in them which very often is fentanyl the powerful synthetic opioid. According to Dewey the number one cause of suicide in high school students is ecstasy induced depression.
- We have continued to see skyrocketing, overdose death rates attributed mostly to the presence of fentanyl. The US Centers for Disease Control (CDC) has reported that in 2021, 106,699 drug overdose deaths occurred. Although rates were up across all age groups adults aged 65 and over had the largest percentage increase from 2020 through 2021

Regrettably the dangers today are not limited to illicit drugs with additives. Some of the newer trends in alcohol use are also raising flags. Disturbing trends include "Eyeballing" or the "EYE SHOT" which involves pouring alcohol directly into the eye socket resulting in an immediate high yet many young folks are unaware of the potential neurological damage including vision loss which can be severe and permanent. Dr. Dewey cites a 15% permanent blind rate for those who do this. This risky method has

become popular for both the rapid, intense high and the benefit of no odor of alcohol on the breath avoiding potential DWI arrests if a Breathalyzer test were to be administered.

“Tamping” involves soaking a Tampon in alcohol and inserting it into the rectum or vagina another risky behavior being practiced by an increasing number of young people today. The rapid absorption of the alcohol through the mucous membranes leads to a quick, powerful and potentially dangerous intoxication that remains largely undetectable by traditional testing methods like a breathalyzer.

Two more popular methods involve the breathing in of alcohol vapors after pouring the liquid over dry ice and using a pipe or a straw to inhale the fumes and the heating of alcohol to produce steam vapors for inhalation. These are forms of vaping mistakenly believed to be harmless by many young people when in fact these practices are dangerous, much more so than drinking.

The human body typically processes alcohol through the digestive system however when vaporized alcohol avoids the digestive route, including the stomach and liver and goes directly to the lungs and then the brain. The fact that the alcohol is not metabolized in the liver first, means an almost immediate effect from a more potent alcohol concentration creating a very dangerous high with a heightened risk for alcohol poisoning. One of the body's protective responses to the over consumption of alcohol is for the person to become sick and vomit however with the inhalation methods the digestive tract is bypassed so this does not occur.

What is the most rapidly growing addiction in America today? “Gaming” according to Dr. Dewey who adds this is twice as addictive as the most addictive drugs ever studied. He shared that two of the founders of the ultra-popular video game, FORTNITE are also addiction psychiatrists who openly admit they intentionally created the game to be addictive. We know that one of the best ways to ensure that something becomes addictive is to combine it with something else that is also addicting (cell phones) which in this case is how most young people play video games. With an ominous warning Dr. Dewey proclaimed “we have never seen a greater predictor for chemical addiction later on than these games”.

Age at onset of alcohol/drug use is an important factor as well as evidenced by the following example: A shot of tequila consumed by a high school senior raises dopamine levels about 4500% while the same shot when ingested by a 7<sup>th</sup> grader raises levels 25,000%.

Chances of developing dependency are exacerbated when combining the increased product potency with adolescent onset of alcohol use. Research shows that postponing the use of alcohol into one's 20's dramatically decreases chances of developing an alcohol use disorder (AUD).

Conversely the single greatest predictor for successful recovery from addiction is going away to inpatient treatment; Dr. Dewey proclaims. This being away from all of their individual triggers; (people, places, and things) is enormously beneficial as research shows that the rituals, behaviors and triggers around the use of drugs etc., are just as addictive as the chemical use itself.

Talk to your children about the present day dangers of drinking and drug use; it could help save a life.

For help with an alcohol problem call LECSA EAP/MAP @ 631-851-1295