

## 1: Anger, Aggression and Addiction - the Dual Diagnosis Recovery Network Imperial County, California

*Alcohol, Drugs and Aggression Over time alcohol and drugs have been linked to anger and aggression. Alcohol, stimulants (cocaine and methamphetamine), anabolic steroids, marijuana and other drugs have either been used to ameliorate uncomfortable emotional states or have been implicated in the precipitation of anger and aggression.*

But their behaviour can have far-reaching consequences. Families and friends can be the targets of alcohol-fuelled outbursts, as can other unsuspecting members of the public. For Caldicott, who regularly sees the results of alcohol-related violence, personality is a key element that separates aggressive drunks from everyone else. People who are more irritable, have poorer anger control, and who display lower levels of empathy towards others when sober, are more likely to be aggressive when they have alcohol in their system. Gender also has an influence: Out of control There is increasing evidence that subtle variations in brain function mean some people behave worse than others when they have a few drinks. Decision-making, problem solving and reasoning are all jobs the executive system takes control of. As Heinz explains, it is like the command centre of the brain, that "tells you when to put on the brakes, think about the consequences, steer yourself towards a better long-term outcome. Instead of taking a few deep breaths when we feel slighted or insulted, we give in to our impulses, which for some are violent. Importantly, some people naturally have poorer executive control than others, and these people, particularly if they are male, are more likely to be aggressive after drinking alcohol. A lack of executive control could also help to explain why adolescents and young adults are so frequently the perpetrators of violent behaviour when drunk. It has been shown that our brains continue to develop well into our 20s and that one of the last parts of the brain to develop is the prefrontal lobe, the region responsible for reigning in impulses through executive control. People who have a dependence on alcohol have a "double whammy" when it comes to executive control, according to Heinz. Each time they consume alcohol, their executive functioning is impaired due to the alcohol in their system. Studies on rats have shown that, as in humans, only a small proportion of individuals become aggressive when inebriated. The studies also show that rats with lower levels of the brain signalling chemical serotonin, and higher levels of another called dopamine, are more likely to be aggressive when given alcohol. Such brain signalling chemicals are known as neurotransmitters. Similar changes in both of these neurotransmitters have been found in chronic alcohol drinkers, and it is believed likely they play a role in violence in non-alcoholic binge drinkers too. People with lower serotonin levels are also known to be more likely to consume alcohol to the point of excess. Since early life trauma and adversity can alter serotonin signalling, these factors have potential to raise the odds of a person having a short temper when drunk. Alert and alarmed When someone accidentally bumps into you in a crowded bar or at a sporting event, most of us are able to quickly shrug it off as a benign interruption to our day. But add alcohol to the equation and an innocuous bump can suddenly be interpreted as a serious threat, or even a deliberate act of aggression. Expectations matter For Heinz, one of the most interesting areas of individual difference when it comes to alcohol-related aggression is in what we expect to happen when we get drunk. Expectations about what behaviour is normal and socially acceptable when alcohol is consumed can be set in place long before we take our first sip of beer. How our parents act when they drink can lay down our first impression of alcohol-related behaviour. The power of expectation can also play a part in influencing how people behave when they consume different alcoholic drinks, quite apart from the physical impact of differing alcohol concentrations, Heinz believes. Whether certain drinks, such as those with high levels of sugar or caffeine, help to enhance aggression is unclear, although Heinz notes that alcoholic drinks that contain caffeine can lead people to take more risks than they otherwise would. Curbing violent behaviour With people who are more likely to be aggressive when they drink, one of the greatest challenges for psychologists like Heinz is teaching temper control. She says that anger management programs are a good start for those who end up seeking help when alcohol gets them into trouble with the law or their families. But when it comes to reducing the number of people turning up at hospital emergency departments due to alcohol-related violence, Caldicott believes limiting overall community alcohol consumption would be of clear benefit.

## 2: Alcohol, Drugs and Aggression | Dual Diagnosis

*The alcohol-drug abuse-violence nexus presents itself in several distinctly different facets: alcohol and other drugs of abuse may act on brain mechanisms that cause a high-risk individual to engage in aggressive and violent behavior.*

Alcoholism Treatment Individuals who wish to overcome an alcohol abuse problem have a number of options. Alcohol treatment centers are designed to help individuals who are addicted or who abuse alcohol in a number of ways. Typically, treatment centers require an individual to stay at the center for a specific amount of time. Many centers offer both long- and short-term treatment options. During treatment, individuals go through detoxification. Detoxification is the set of interventions used to keep a person safe as they readjust to a lack of alcohol in the body. Treatment centers are designed to provide support in the form of individual therapy, as well as group therapy and educational classes on drug addiction. During therapy sessions, alcoholics can explore their reasons behind their excess alcohol consumption, as well as what they can do to overcome their abusive behavior. Outpatient treatment is also an option for many alcoholics. Outpatient treatment centers are designed to provide recovering alcoholics with a place to explore their destructive behavior. Many outpatient treatment centers provide anonymous group meetings, as well as other programs to help recovering individuals overcome their issues. With outpatient treatment, individuals are not placed in a controlled environment and may be vulnerable to outside temptation during treatment. Typically, this type of treatment is ideal for those who have successfully completed an inpatient treatment program and want a step-down level of care or those whose addiction are subjectively not as severe. Statistics There are more people in the United States who drink on a regular basis than there are people who do not drink at all, according to the NSDUH. Almost 88,000 people died each year between and due to alcohol-related causes. Alcohol is the third leading cause of preventable death in the U.S. More than 15 million people needed treatment for an alcohol use disorder in 2010. Teen Alcohol Abuse Alcohol tops the list of drugs used by teenagers. Adults are not the only ones who can suffer from alcohol abuse. Many teenagers are at risk of developing an alcohol abuse problem due to the accessibility of the substance and peer pressure. Alcohol tops the list of drugs used by teenagers, per the National Institute on Drug Abuse. Teen alcohol abuse symptoms include:

## 3: Domestic Violence: Explore the Issue

*Alcohol, Violence, and Aggression* Scientists and nonscientists alike have long recognized a two-way association between alcohol consumption and violent or aggressive behavior (1). Not only may alcohol consumption promote aggressiveness, but victimization may lead to excessive alcohol consumption.

Anger, aggression and addiction are intertwined in many ways, Anger has been implicated in relapse as stated in the language of Alcoholics Anonymous. For decades the self-help programs have warned those in recovery from addiction to avoid becoming hungry, angry, lonely, and tired. These emotions are also a confounding factor in situations where another psychiatric disorder coexists with addictive disorder For example, anger and aggressive acting out are symptoms of bipolar illness, paranoid schizophrenia, post traumatic stress disorder, attention deficit disorder, and personality disorders such as antisocial borderline and paranoid character disturbances. Toxicity from stimulant drugs such as cocaine and methamphetamine lead to paranoia, hyperarousal and often to violence, with violence being the number one cause of death for those addicted to stimulant drugs. Anger and rage can be viewed from another perspective. They are emotions that helped the individual cope with early life chaos and abuse. In this regard, anger can be perceived as a learned coping strategy secondary to early life experience. Complicating the search for understanding is the fact that DSM has no means to describe or classify anger and aggression. This seems inconsistent as the manual places such emphasis on the other two core emotions – anxiety and affective conditions Anger, aggression and even violence are mentioned as symptoms of psychiatric disorders but do not have a systematic classification system. This article will focus on two different but overlapping sets of classes. The first section will focus on anger as a symptom of certain psychiatric disorders. In this case the focus will be the addictive disorders. The second set of glasses views anger and rage as learned coping and survival skills. In this context, anger and rage are described as purposeful and are utilized in an attempt to establish control in situations where the individual is fearful of being out of control. Alcohol, Drugs and Aggression Over time alcohol and drugs have been linked to anger and aggression. Alcohol, stimulants cocaine and methamphetamine , anabolic steroids, marijuana and other drugs have either been used to ameliorate uncomfortable emotional states or have been implicated in the precipitation of anger and aggression. Not only do many of the mood altering substances impair perception but also there is proof that alcohol and drugs – through their ability to alter neurotransmitter levels alter mood state. During the later stages of dependence, alcohol can cause a decrease in the neurotransmitter serotonin. Most significant from a psychological or psychiatric perspective is the relationship between serotonin and depression, sleep regulation, aggression and suicide. Rats with low serotonin levels will attack and kill other rodents. This would indicate that the relationship between aggression and alcoholism is more than just a perceptual inhibition. Stimulant Drugs The leading causes of death for cocaine and methamphetamine addicts are violence, suicide and accident. All are violent and also may have strong connections to toxic alterations of the neurotransmitters norepinephrine and dopamine. During toxic episodes stimulant drugs can create an elevation of both norepinephrine and dopamine. Increased norepinephrine levels create a state of hyperarousal. Combine this with continued elevations of dopamine and there is a potential for a paranoid state. As dopamine starts to elevate in the brain, the user experiences context appropriate paranoia. A good example of this is the sense that every sound outside of your apartment is a narcotics agent causing the individual to constantly look thru the peephole in the door. As dopamine levels continue to elevate with continued use of a stimulant drug a presentation develops that looks like delusional paranoid disorder. Persecutory, jealous and other delusions can exist. A man in a treatment program once described a paranoid delusion that occurred in the early morning hours after a night of heavy free base usage. He believed that there were unmarked police cars parked up and down his street. In order to check and see if they were there, he would walk out of his house every fifteen minutes to look inside his mailbox while scanning the street for unmarked police cars. He felt that this was the only inconspicuous way he could check for signs of trouble. These phrases seem to indicate a desired experience secondary to inhalation. Clinicians should look for these emotional expressions in the patient and if they do not disappear quickly remember the

abstinence syndrome can manifest as anxiety and irritability lasting for up to three days after cessation and these symptoms can come back in an exaggerated fashion in weeks they should be treated as an underlying problem and a relapse issue. For example, an injectable can be added on top of oral ingestion. As the dose levels increase, rage and aggression may be a symptom of the drug experience. Anger As a Learned Coping Survival Skill Many alcoholics and addicts enter treatment with backgrounds of neglect and abuse. As a way of trying to cope with an unmanageable situation as children, they made conscious decisions never to let anyone get close or hurt them again. Generally this decision is made between the ages of 8 and 14 years of age. A woman when asked in group when she decided to never let anyone hurt her again, responded by stating she remembers her parents physically fighting and decided at age 11 that she would not put up with this. She decided to run away from home every time there was fighting. A man related a story about his father beating him with a belt when he was drunk. He made a decision at age 12 to never let this happen to him again. Whenever his father came after him with the belt he would attack him. These modus operandi are repeated during their lives. These learned coping strategies can present in many and varied ways. Four strategies that can be observed are as follows: When situations arise where an individual feels out of control or powerless, they can turn away. This strategy was evident in the above story of the lady who decided as a child to run away from crisis. Others may withdraw using a reactive depression to avoid confrontation. Still others will turn to alcohol and drugs to avoid reality. Patients with narcissistic and antisocial disorders will utilize a narcissistic maneuver to keep a clinician from getting too close to their core. This patient may walk out of a session when the heat gets turned up too high or they do not get what they feel they deserve. Clinicians can recall patients that harm themselves when a real or perceived sense of abandonment exists. Termination of therapy can cause certain patients for example borderline character disordered patients to experience increased anxiety and resulting impulsive behavior such as cutting, burning, sexual acting out or use of food, alcohol and drugs. In order to cope with a stressful situation, patients may put others down to enhance their self-image. These put downs can take the form of verbal defamation all the way to sadistic behavior.

## 4: Symptoms and Signs of Drug Abuse - [www.enganchecubano.com](http://www.enganchecubano.com)

*In the year age range, 50% of deaths (from accidents, homicides, suicides) involve alcohol or drug abuse. Drugs and alcohol also contribute to physical and sexual aggression such as assault or rape.*

Use of these drugs may cause: Risks associated with specific drugs are described later in this section. The substance abuse of family members and friends may also be of concern to individuals. Even low doses of alcohol impair brain function, judgment, alertness, coordination and reflexes. Very high doses cause suppression of respiration and death. Chronic alcohol abuse can produce dementia, sexual impotence, cirrhosis of the liver, and heart disease; and sudden withdrawal can produce severe anxiety, tremors, hallucinations, and life-threatening convulsions. Neuroscience research shows that alcohol impairs the formation of new memories and learning, especially in the developing brain--and as college-aged students, your brains are still developing. Alcohol use can cause both short term and long-term problems for those who choose to use it. Alcohol is a central nervous system depressant whose effects depend on how much you drink. These effects may range from loss of inhibition with only one drink to making someone "stumbling drunk" to acute alcohol poisoning with loss of consciousness and difficulty breathing. Acute alcohol poisoning usually occurs in situations of rapid alcohol intake such as shots, funneling, keg stands and drinking games. Even after someone passes out their BAC blood alcohol concentration can continue to rise from the alcohol still in their stomach. Medical attention is critical to prevent serious injury or death. Women are affected by alcohol to a greater degree than men. Because women tend to be smaller than men, alcohol is less diluted upon reaching the brain than in larger individuals. Women also become intoxicated more easily days before their menstrual periods. Finally, women absorb more alcohol into their bloodstreams because they lack the enzyme alcohol dehydrogenase in their stomach, which in men breaks down some alcohol before it is absorbed. People with a family history of substance abuse are 4 - 10 x more likely than the general population to develop substance abuse and addiction in their lifetime, and tend to do so at an earlier age. People who begin drinking before age 15 are 5x more likely to develop substance abuse issues in their lifetime, as well. Some warning signs of dependence are: Warning signs of addiction include all of the above and physical withdrawal symptoms after a drinking episode such as anxiety, tremors, sleep disturbances, hallucinations and seizures. Seeking medical attention for alcohol related problems will not result in notification of parents or the University administration except in emergency situations. These are Safe Havens and will not result in judicial sanctions for intoxication. Stay with the person or call a RA or another individual to stay with the person--never leave an intoxicated friend alone. Turn person on their side and do not give them coffee, ibuprofen, aspirin, or put them in a shower. If the person is not vomiting, give them water to drink. If they are taking fewer than 8 breaths per minute or if there is more than 10 seconds between breaths they are in danger of respiratory failure. Their skin may be pale and ashen in color and clammy to the touch. The base of the fingernails and the lips may look bluish because the person is not getting enough oxygen. If you see someone drinking straight out of a liquor bottle or playing drinking games the person should be watched closely because the effects can come on quickly. New products have been marketed such as alco-pops, supersized malt beverage cans, and alcohol energy drinks containing guarana and ginseng. Mixing alcohol with energy drinks such as Red Bull are just as dangerous. Studies show that people who consume these beverages have a higher BAC and a higher rate of injury and other negative consequences than people who drink alcoholic beverages without stimulants. The bottom line is that these drinks are not safe and often lead to higher rates and levels of intoxication. The sweet taste covers the taste of alcohol, giving the false impression one can drink more without the intoxicating effects. Use of illegal drugs and misuse of prescription drugs can have social, academic, psychological, physical, financial and legal consequences. Information below references specific drugs or drug categories, but is not intended as a comprehensive listing of drugs and their associated health risks. THC is a fat soluble substance and can remain in the lungs, liver, reproductive organs and brain tissue for up to 3 weeks. This can be followed by drowsiness and sedation. Other effects include heightened sensory awareness, euphoria, altered perceptions and feeling hungry "the munchies". High concentrations of THC may produce a more

hallucinogenic response. The effects of marijuana may vary based on: Discomforts associated with smoking marijuana include dry mouth, dry eyes, increased heart rate, and visible signs of intoxication such as bloodshot eyes and puffy eyelids. Other problems include impaired memory and ability to learn; difficulty thinking and problem solving; anxiety attacks or feelings of paranoia; impaired muscle coordination and judgment; increased susceptibility to infections; dangerous impairment of driving skills. Tolerance to marijuana develops rapidly. Physical and psychological withdrawal symptoms from marijuana include irritability, restlessness, insomnia, nausea and intense dreams. Warning signs of dependence are: The toxicity of active ingredients--not to mention the unknown ingredients in these products--is not well studied. In addition to the variable composition, these synthetic compounds are expensive, harsh on your lungs to smoke, may interact with other prescription or over the counter drugs in unpredictable and dangerous ways, do not mix well with alcohol, and often produce a very short "high" lasting no more than 30 minutes. Perception and cognition are impaired and muscular coordination decreases. Speech is blocked and incoherent. Chronic users of PCP may have memory problems and speech difficulties lasting 6 months to a year after prolonged daily use. Depression, anxiety, and violent behavior also occur. High psychological dependence on the drug may result in taking large doses of PCP. Large doses produce convulsions, comas, and heart and lung failure. Lysergic acid diethylamine L. Physical effects include dilated pupils, elevated body temperature, increased heart rate and blood pressure, decreased appetite, insomnia and tremors. Psychological reactions include panic, confusion, paranoia, anxiety and loss of control. Flashbacks, or delayed effects, can occur even after use has ceased. COCAINE - Cocaine prompts the release of dopamine, a neurotransmitter responsible for pleasure and movement, and inhibits the reabsorption of it, over stimulating the brain. Users report feelings of euphoria, hyper-stimulation, confidence, and alertness. Cocaine is extremely addictive and is considered one of the most powerful reinforcing drugs. Cocaine raises blood pressure, heart rate, and respiration increasing the risk of respiratory arrest, stroke, seizures, heart attacks, and death. The physical effects produced are elevated heart and respiratory rates, increased blood pressure, insomnia, and loss of appetite. Sweating, headaches, blurred vision, dizziness, and anxiety may also result from use. High dosage can cause rapid or irregular heartbeat, tremors, loss of motor skills and even physical collapse. Long-term use of higher doses can produce amphetamine psychosis which includes hallucinations, delusions and paranoia. Prescription stimulant drugs, dubbed "academic steroids," are used by some college students in an attempt to enhance their academic performance. It is against federal law to use these medications without an authorized prescription from a physician. Students who share or sell their prescription drugs are abusing a medical privilege, breaking the law, and face severe penalties if caught. These drugs are used for medical purposes to relieve anxiety and to induce sleep. Physical and psychological dependence can occur if the drugs are used for longer periods of time or at higher doses than prescribed. Benzodiazepine use can cause slurred speech, disorientation, and lack of coordination. If taken with alcohol, use can lead to coma and possible death. Dextromethorphan in cough syrup is closely related. After an initial feeling of euphoria, narcotic use causes drowsiness, nausea, and vomiting. Effects of overdose include slow and shallow breathing, clammy skin, convulsions, coma and possible death. Physical and psychological dependence is high, and withdrawal symptoms include watery eyes, runny nose, loss of appetite, irritability, tremors, panic, abdominal cramps and diarrhea, nausea, chills, and sweating. This family of drugs is the most frequent cause of drug-associated death from suppression of the life supporting functions of the brain, heart and lungs.

## 5: Health and Behavioral Risks of Alcohol and Drug Use : Washington and Lee University

*Substance abuse is when you take drugs that are not legal. It's also when you use alcohol, prescription medicine, and other legal substances too much or in the wrong way.*

Anger, Aggression and Addiction By: For decades the self-help programs have warned those in recovery from addiction to avoid becoming hungry, angry, lonely, and tired. These emotions are also a confounding factor in situations where another psychiatric disorder coexists with addictive disorder. For example, anger and aggressive acting out are symptoms of bipolar illness, paranoid schizophrenia, post traumatic stress disorder, attention deficit disorder, and personality disorders such as antisocial borderline and paranoid character disturbances. Toxicity from stimulant drugs such as cocaine and methamphetamine lead to paranoia, hyperarousal and often to violence, with violence being the number one cause of death for those addicted to stimulant drugs. Anger and rage can be viewed from another perspective. They are emotions that helped the individual cope with early life chaos and abuse. In this regard, anger can be perceived as a learned coping strategy secondary to early life experience. Complicating the search for understanding is the fact that DSM has no means to describe or classify anger and aggression. This seems inconsistent as the manual places such emphasis on the other two core emotions -- anxiety and affective conditions. Anger, aggression and even violence are mentioned as symptoms of psychiatric disorders but do not have a systematic classification system. This article will focus on two different but overlapping sets of classes. The first section will focus on anger as a symptom of certain psychiatric disorders. In this case the focus will be the addictive disorders. The second set of glasses views anger and rage as learned coping and survival skills. In this context, anger and rage are described as purposeful and are utilized in an attempt to establish control in situations where the individual is fearful of being out of control. Alcohol, Drugs and Aggression Over time alcohol and drugs have been linked to anger and aggression. Alcohol, stimulants cocaine and methamphetamine, anabolic steroids, marijuana and other drugs have either been used to ameliorate uncomfortable emotional states or have been implicated in the precipitation of anger and aggression. Not only do many of the mood altering substances impair perception but also there is proof that alcohol and drugs -- through their ability to alter neurotransmitter levels alter mood state. During the later stages of dependence, alcohol can cause a decrease in the neurotransmitter serotonin. Most significant from a psychological or psychiatric perspective is the relationship between serotonin and depression, sleep regulation, aggression and suicide. Rats with low serotonin levels will attack and kill other rodents. This would indicate that the relationship between aggression and alcoholism is more than just a perceptual inhibition. Stimulant Drugs The leading causes of death for cocaine and methamphetamine addicts are violence, suicide and accident. All are violent and also may have strong connections to toxic alterations of the neurotransmitters norepinephrine and dopamine. During toxic episodes stimulant drugs can create an elevation of both norepinephrine and dopamine. Increased norepinephrine levels create a state of hyperarousal. Combine this with continued elevations of dopamine and there is a potential for a paranoid state. As dopamine starts to elevate in the brain, the user experiences context appropriate paranoia. A good example of this is the sense that every sound outside of your apartment is a narcotics agent causing the individual to constantly look thru the peephole in the door. As dopamine levels continue to elevate with continued use of a stimulant drug a presentation develops that looks like delusional paranoid disorder. Persecutory, jealous and other delusions can exist. A man in a treatment program once described a paranoid delusion that occurred in the early morning hours after a night of heavy free base usage. He believed that there were unmarked police cars parked up and down his street. In order to check and see if they were there, he would walk out of his house every fifteen minutes to look inside his mailbox while scanning the street for unmarked police cars. He felt that this was the only inconspicuous way he could check for signs of trouble. These phrases seem to indicate a desired experience secondary to inhalation. Clinicians should look for these emotional expressions in the patient and if they do not disappear quickly remember the abstinence syndrome can manifest as anxiety and irritability lasting for up to three days after cessation and these symptoms can come back in an exaggerated fashion in weeks they should be treated as an underlying problem and a relapse

issue. For example, an injectable can be added on top of oral ingestion. As the dose levels increase, rage and aggression may be a symptom of the drug experience. Anger As a Learned Coping Survival Skill Many alcoholics and addicts enter treatment with backgrounds of neglect and abuse. As a way of trying to cope with an unmanageable situation as children, they made conscious decisions never to let anyone get close or hurt them again. Generally this decision is made between the ages of 8 and 14 years of age. A woman when asked in group when she decided to never let anyone hurt her again, responded by stating she remembers her parents physically fighting and decided at age 11 that she would not put up with this. She decided to run away from home every time there was fighting. A man related a story about his father beating him with a belt when he was drunk. He made a decision at age 12 to never let this happen to him again. Whenever his father came after him with the belt he would attack him. These modus operandi are repeated during their lives. Coping decisions

These learned coping strategies can present in many and varied ways. Four strategies that can be observed are as follows: Withdrawal When situations arise where an individual feels out of control or powerless, they can turn away. This strategy was evident in the above story of the lady who decided as a child to run away from crisis. Others may withdraw using a reactive depression to avoid confrontation. Avoidance Still others will turn to alcohol and drugs to avoid reality. Patients with narcissistic and antisocial disorders will utilize a narcissistic maneuver to keep a clinician from getting too close to their core. This patient may walk out of a session when the heat gets turned up too high or they do not get what they feel they deserve. Attack self Clinicians can recall patients that harm themselves when a real or perceived sense of abandonment exists. Termination of therapy can cause certain patients for example borderline character disordered patients to experience increased anxiety and resulting impulsive behavior such as cutting, burning, sexual acting out or use of food, alcohol and drugs. Attack others In order to cope with a stressful situation, patients may put others down to enhance their self-image. These put downs can take the form of verbal defamation all the way to sadistic behavior. Treatment Considerations Any time that a patient is being treated for two or more disorders that are in any way related to each other for example alcoholism and bipolar illness with anger as an attendant feature, the treatment team must help the patient integrate all of the concepts into a related whole. If the staff fails to accomplish this, then it is left to the patient to do the integration. Where there is a psychiatric disorder such as depression, a treatment approach can be developed depending on the severity of the presentation. In moderate to severe depression a medication is typically utilized. Psychotherapy is an appropriate adjunct. In situations where there is addiction, the initial step is to discontinue alcohol and drug use and manage any medical or psychiatric problems that coexist. To date there are three empirically proven psychotherapeutic approaches helpful in managing anger and aggressive behavior. These approaches are cognitive, behavioral, and relaxation therapies often used in combination. The difficulty arises when the anger and aggression or any of the above stated coping strategies is part of some developmental theme such as abandonment, authority, or sexuality. In these instances a form of therapy that is insight oriented may help to address the early life issues. These early issues such as neglect and abuse seem to be right brain oriented and need a therapeutic approach that creates enough excitation to be effective. The resolution of aggression, like addiction, cannot be solved in 10 easy steps as some books might suggest. The relationship between anger, aggression and addiction is complex and multidetermined. The therapeutic answer requires a combination of considerations. Treatment planning needs to encompass the issues of environment use of medication, and proper choice of psychotherapeutic approach.

## 6: Alcohol and Sexual Assault

*The researchers also found that acts of physical aggression that were linked to alcohol abuse were most likely to occur between p.m. and midnight. Anabolic Steroids According to the National Institute of Drug Abuse, or NIDA, the psychiatric effects of steroid abuse include rage and aggression as well as mania and delusional behavior.*

Not only may alcohol consumption promote aggressiveness, but victimization may lead to excessive alcohol consumption. Violence may be defined as behavior that intentionally inflicts, or attempts to inflict, physical harm. Violence falls within the broader category of aggression, which also includes behaviors that are threatening, hostile, or damaging in a nonphysical way<sup>2</sup>. This Alcohol Alert explores the association between alcohol consumption, violence, and aggression and the role of the brain in regulating these behaviors. Understanding the nature of these associations is essential to breaking the cycle of alcohol misuse and violence. Extent of the Alcohol-Violence Association Based on published studies, Roizen<sup>3</sup> summarized the percentages of violent offenders who were drinking at the time of the offense as follows: These figures are the upper limits of a wide range of estimates. In a community-based study, Pernanen<sup>4</sup> found that 42 percent of violent crimes reported to the police involved alcohol, although 51 percent of the victims interviewed believed that their assailants had been drinking. Alcohol-Violence Relationships Several models have been proposed to explain the complex relationships between violence or aggression and alcohol consumption. To avoid exposing human or animal subjects to potentially serious injury, research results discussed below are largely based on experiments on nonphysical aggression. Other studies involving humans are based on epidemiological surveys or data obtained from archival or official sources. Alcohol may encourage aggression or violence by disrupting normal brain function. According to the disinhibition hypothesis, for example, alcohol weakens brain mechanisms that normally restrain impulsive behaviors, including inappropriate aggression<sup>5</sup>. By impairing information processing, alcohol can also lead a person to misjudge social cues, thereby overreacting to a perceived threat<sup>6</sup>. Simultaneously, a narrowing of attention may lead to an inaccurate assessment of the future risks of acting on an immediate violent impulse<sup>7</sup>. Many researchers have explored the relationship of alcohol to aggression using variations of an experimental approach developed more than 35 years ago<sup>8,9</sup>. In a typical example, a subject administers electric shocks or other painful stimuli to an unseen "opponent," ostensibly as part of a competitive task involving learning and reaction time. Unknown to the subject, the reactions of the nonexistent opponent are simulated by a computer. Subjects perform both while sober and after consuming alcohol. In many studies, subjects exhibited increased aggressiveness<sup>e</sup>. These findings suggest that alcohol may facilitate aggressive behavior. However, subjects rarely increased their aggression unless they felt threatened or provoked. Moreover, neither intoxicated nor sober participants administered painful stimuli when nonaggressive means of communication<sup>e</sup>. These results are consistent with the real-world observation that intoxication alone does not cause violence<sup>4</sup>. Social and Cultural Expectancies. Alcohol consumption may promote aggression because people expect it to<sup>5</sup>. For example, research using real and mock alcoholic beverages shows that people who believe they have consumed alcohol begin to act more aggressively, regardless of which beverage they actually consumed. Alcohol-related expectancies that promote male aggressiveness, combined with the widespread perception of intoxicated women as sexually receptive and less able to defend themselves, could account for the association between drinking and date rape. In addition, a person who intends to engage in a violent act may drink to bolster his or her courage or in hopes of evading punishment or censure<sup>12</sup>. The motive of drinking to avoid censure is encouraged by the popular view of intoxication as a "time-out," during which one is not subject to the same rules of conduct as when sober<sup>14</sup>. A history of childhood sexual abuse<sup>16</sup> or neglect<sup>17</sup> is more likely among women with alcohol problems than among women without alcohol problems. Widom and colleagues<sup>17</sup> found no relationship between childhood victimization and subsequent alcohol misuse in men. Even children who only witness family violence may learn to imitate the roles of aggressors or victims, setting the stage for alcohol abuse and violence to persist over generations. Finally, obstetric complications that damage the nervous system at birth, combined with subsequent parental neglect such as might occur in an

alcoholic family, may predispose one to violence, crime, and other behavioral problems by age 18-19. Violence may precede alcohol misuse in offenders as well as victims. For example, violent people may be more likely than nonviolent people to select or encounter social situations and subcultures that encourage heavy drinking. In summary, violence may contribute to alcohol consumption, which in turn may perpetuate violence.

### Common Causes for Alcohol Misuse and Violence

In many cases, abuse of alcohol and a propensity to violence may stem from a common cause. This cause may be a temperamental trait, such as a risk-seeking personality, or a social environment.

#### e. Another example of a common cause relates to the frequent co-occurrence of antisocial personality disorder (ASPD) and early-onset alcoholism.

ASPD is a psychiatric disorder characterized by a disregard for the rights of others, often manifested as a violent or criminal lifestyle. Type II alcoholism is characterized by high heritability from father to son; early onset of alcoholism often during adolescence; and antisocial, sometimes violent, behavioral traits. Type II alcoholics and persons with ASPD overlap in their tendency to violence and excessive alcohol consumption and may share a genetic basis.

### Spurious Associations

Spurious associations between alcohol consumption and violence may arise by chance or coincidence, with no direct or common cause. For example, drinking is a common social activity for many adult Americans, especially those most likely to commit violent acts. Therefore, drinking and violence may occur together by chance.

5. In addition, violent criminals who drink heavily are more likely than less intoxicated offenders to be caught and consequently are overrepresented in samples of convicts or arrestees.

7. Spurious associations may sometimes be difficult to distinguish from common-cause associations.

### Physiology of Violence

Although individual behavior is shaped in part by the environment, it is also influenced by biological factors.

#### e. Individual differences in brain chemistry may explain the observation that excessive alcohol consumption may consistently promote aggression in some persons, but not in others.

The following subsections highlight some areas of intensive study.

### Serotonin

Serotonin, a chemical messenger in the brain, is thought to function as a behavioral inhibitor. Thus, decreased serotonin activity is associated with increased impulsivity and aggressiveness (26) as well as with early-onset alcoholism among men. Researchers have developed an animal model that simulates many of the characteristics of alcoholism in humans. Rhesus macaque monkeys sometimes consume alcohol in sufficient quantities to become intoxicated. Macaques with low serotonin activity consume alcohol at elevated rates (25); these monkeys also demonstrate impaired impulse control, resulting in excessive and inappropriate aggression (25). This behavior and brain chemistry closely resemble that of type II alcoholics. Interestingly, among both macaques and humans, parental neglect leads to early-onset aggression and excessive alcohol consumption in the offspring, again correlated with decreased serotonin activity. Although data are inconclusive, the alcohol-violence link may be mediated by chemical messengers in addition to serotonin, such as dopamine and norepinephrine. There is also considerable overlap among nerve cell pathways in the brain that regulate aspects of aggression (29), sexual behavior, and alcohol consumption. These observations suggest a biological basis for the frequent co-occurrence of alcohol intoxication and sexual violence.

### Testosterone

The steroid hormone testosterone is responsible for the development of male primary and secondary sexual characteristics. High testosterone concentrations in criminals have been associated with violence, suspiciousness, and hostility (31). In animal experiments, alcohol administration increased aggressive behavior in socially dominant squirrel monkeys, who already exhibited high levels of aggression and testosterone. Alcohol did not, however, increase aggression in subordinate monkeys, which exhibited low levels of aggression and testosterone (6). These findings may shed some light on the life cycle of violence in humans. In humans, violence occurs largely among adolescent and young adult males, who tend to have high levels of testosterone compared with the general population. Young men who exhibit antisocial behaviors often "burn out" with age, becoming less aggressive when they reach their forties. By that age, testosterone concentrations are decreasing, while serotonin concentrations are increasing, both factors that tend to restrain violent behavior.

### Conclusion

No one model can account for all individuals or types of violence. Although much remains to be learned, research suggests that some violent behavior may be amenable to treatment and some may be preventable. One study found decreased levels of marital violence in couples who completed behavioral marital therapy for alcoholism and remained sober during followup. Results of another study (7) suggest that a percent increase in

the beer tax could reduce murder by 0. Although these results are modest, they indicate a direction for future research. In addition, preliminary experiments have identified medications that have the potential to reduce violent behavior. Such medications include certain anticonvulsants e. However, these studies either did not differentiate alcoholic from nonalcoholic subjects or excluded alcoholics from participation. Both alcohol use and violence are common in our society, and there are many associations between the two. Understanding the nature of these associations, including the environmental and biological antecedents of each and the ways in which they may be related, is essential to developing effective strategies to prevent alcohol-related violence as well as other social problems, such as domestic violence, sexual assault, and childhood abuse and neglect. Because no area of science stands apart from another, understanding more about alcohol-related violence also will shed light on violence in general and produce information that may be useful to reducing it. Science has made progress on elucidating the environmental and biological antecedents of alcohol abuse and alcoholism; less progress has been made toward understanding the causes of violence. Understanding the biology of violence will help us to clearly define the role of the environment in increasing the risk for violence and increase our understanding of who is at risk for violent behavior. This understanding also will help us to develop effective interventions--both social and medical where intended--to help those whose violence has caused trouble for themselves and others.

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## 7: Alcohol and Drug Abuse

*ILLEGAL DRUGS, ALCOHOL, AND VIOLENT CRIME. While the association of alcohol, drug use, and violent crime enjoys a long research history, it is only in recent years that direct measures of this relationship (e.g., physical drug tests and officially known crimes) using large quantitative data sets have been available.*

Weerts The alcohol-drug abuse-violence nexus presents itself in several distinctly different facets: Individuals with costly heroin or cocaine habits may commit violent crimes in order to secure the resources for further drug purchases. Narcotic drug dealers, but not alcohol vendors, practice their trade in a violent manner. Alcohol, narcotics, hallucinogens, and psychomotor stimulants differ substantially from each other and in the way that they are related to different kinds of violent and aggressive behavior. Generalizations about the linkage of alcohol, drugs of abuse, and violence are complicated by the many direct and indirect levels of interaction e. Page Share Cite Suggested Citation: Understanding and Preventing Violence, Volume 3: The National Academies Press. Systematic evidence for alcohol and other drugs of abuse acting on aggression-specific brain mechanisms stems mainly from studies in animals, although a few neuroendocrine and other neurochemical and neurophysiologic measures have been obtained in humans. Data from studies in animals represent the primary means to investigate experimentally the proximal and distal causes of aggressive behavior, whereas studies in humans most often attempt to infer causative relationships mainly by correlating the incidence of violent and aggressive behavior with past alcohol intake or abuse of other drugs. It is the objective of the present discussion to consider, integrate, and highlight accounts of empirical data that relate alcohol, opiates, amphetamines, cocaine, cannabis, and other hallucinogens to aggressive and violent behavior, with a particular emphasis on the pharmacologic determinants and potential biologic mechanisms. The major methodological features and the key results of the empirical studies are detailed in tables that appear at the end of this paper. The information is organized so that 1 for each drug class, tables for the data on aggression and violence in animals and in humans are separated; 2 the data on human violence are organized according to how they were collected by separating those that stem from criminal statistics, public health records, psychological evaluations, and experimental manipulations; and 3 drug effects on different types of aggressive and violent behavior in animals are grouped according to the aggression-and violence-provoking conditions. Defense of a territory, rival fighting among mature males during the formation and maintenance of a group, defense of the young by a female, and antipredator defense are examples of these types of aggressive, defensive, and submissive behavior patterns, oftentimes referred to as agonistic behavior Scott, Sociobiologic analysis portrays these behavior patterns as having evolved as part of reproductive strategies ultimately serving Page Share Cite Suggested Citation: The damaging and injurious consequences of adaptive agonistic behavior exclude-at least transiently-competing individuals from access to important resources. Strikingly, even in the absence of physical injury, among the most severe consequences of being exposed to aggression or the threat of aggression is the prevention of reproductive behavior. One such example is the so-called psychological castrate monkey who maintains group membership but resides at the periphery, with subordinate access to protected sleeping places, nutritious and palatable foods, grooming interactions, and rest periods. However, the focus on aggressive behavior as it serves an adaptive function in reproductive strategies complicates the extrapolation to violent behavior as it is defined at the human level. How human violence and animal aggression are related in their biologic roots remains to be specified; excessively aggressive behavior may represent an extreme on a continuum with adaptive aggressive behavior patterns. Alternatively, however, adaptive and maladaptive aggressive behavior patterns may differ fundamentally in their functions and causes. Particularly during the s, in a different research tradition, experimental preparations were developed that focused on aversive environmental manipulations to engender certain elements of defensive and aggressive behavior in otherwise placid, domesticated laboratory animals. These so-called animal models of aggression relied on prolonged isolated housing or crowding; exposure to noxious, painful electric shock pulses; omission of scheduled rewards; or restricted access to limited food supplies, as the major environmental manipulations Malick, ; Valzelli et al. The behavioral end point resulting

from such experimental setups rarely extended beyond defensive postures and bites that were difficult to interpret in terms of the ethology of the animal. Such preparations have been questioned in terms of their validity for modeling human aggressive and violent behavior. Similarly, human aggression research under controlled laboratory conditions has employed aversive environmental manipulations that entail the administration of electric shocks, noxious noise, or loss of prize money to a fictitious opponent e. Again, this type of experimental aggression research highlights the dilemma of attempting to model the essential features of "real-world" violence under Page Share Cite Suggested Citation: A third approach used to investigate aggressive behavior in animals under laboratory conditions relies on physiologic and pharmacologic manipulations. Histopathological findings of brain tumors in violent patients e. Such experimental manipulations may result in rage-like defensive postures and biting, often called rage, hyperreactivity, or hyperdefensiveness e. Alternatively, electrical stimulation of discrete subcortical regions can evoke predatory attack, as well as aggressive and defensive responses in certain animal species see Delgado, ; Flynn et al. Treatment with near-toxic amphetamine doses and other catecholaminergic agonist drugs may result in bizarre, rage-like responses in otherwise placid laboratory animals Chance, ; Randrup and Munkvad, ; Maj et al. Similarly, aggressive and defensive behavioral elements are induced by exposure to very high doses of hallucinogens and during withdrawal from opiates e. It is noteworthy that mescaline-, amphetamine- and morphine-withdrawal-induced aggressive responses in rats, in conjunction with exposure to electric foot shock, are proposed as "pathological" aggression. The inappropriate context, the unusually fragmented behavioral response patterns, and the limitation to domesticated laboratory rodents render aggressive and defensive reactions that are induced by lesions, electrical brain stimulation, drugs, and toxins problematic in their interpretation. Often these laboratory phenomena are termed bizarre and ambiguous. This brief introduction to and critique of the methodological and conceptual frameworks for studies of animal aggression will guide the subsequent discussion of research findings. It also highlights how a consideration of different kinds of human violence and animal aggression spans a range of environmental determinants, social contexts, functions, causative mechanisms, and consequences in general physiology and, particularly, in the central nervous system CNS. Even a rudimentary understanding of the evolutionary origins of violent behavior in humans and its underlying brain mechanisms needs to begin with an appreciation of the range of agonistic behavior patterns subserving important survival Page Share Cite Suggested Citation: There is no direct evidence, however, that demonstrates homology between the neural circuitry and physiologic activity that mediate aggressive behaviors in animals and those responsible for human violence. As a matter of fact, as reviewed repeatedly see also Brain, and Mirsky and Siegel, in Volume 2 , one major conclusion from work with cats and rats is that discrete neural circuits underlie each type of aggressive, defensive, and submissive behavior, and that the concept of a single neural center or command unit for aggressive behavior, as it has been studied in invertebrates, may not be simply extrapolated to complex mammalian nervous functions. C S TATEMENT The evolutionary origins of aggressive and violent behavior need to be investigated by systematic comparisons of animals belonging to different species in order to delineate functional and neurobiologic common developments. The current animal models of aggression focus mostly on adaptive forms of agonistic behavior during social conflict. In order to relate experimental preparations in animals to issues of human violence, harmful and injurious forms of aggressive behavior must be considered. Similarly, there is a need to define how experimental laboratory measures of irritable, hostile, and aggressive human behavior relate to violence outside the laboratory context. However, such considerations prompt ethical demands about reducing harm and risk to animal and human research subjects. Conventional wisdom attributes disinhibiting effects to alcohol that release aggressive impulses from their cortical inhibition. Yet, the experimental evidence from studies in animals as well as in humans provides a complex pattern of results at the level of the cellular site of action, physiological system, whole organism, social setting, and culture that requires detailed examination. Whether or not alcohol, in a range of doses ingested orally, causes a certain individual to act aggressively more frequently or even to engage in "out-of-character" violent behavior depends on a host of interacting pharmacologic, endocrinologic, neurobiologic, genetic, situational, environmental, social, and cultural determinants. Low acute alcohol doses increase, and high doses decrease,

threat and attack behavior in fish, mice, rats, cats, dogs, primates, college students, and other paid experimental subjects see Tables 2A and 3. This dose-dependent increase and decrease in aggressive behavior are seen in virtually all experimental models of animal aggression. The biphasic pattern of alcohol dose dependence characterizes many behavioral, endocrinologic, and other physiologic actions of this drug Pohorecky, However, Tables 2A and 3 also summarize reports that do not detect a reliable aggression-enhancing effect of low alcohol doses under a range of experimental conditions. During more than two decades of laboratory research in humans, the aggression-heightening effects with acutely consumed drinks containing 0. For example, Cherek et al. Outside of the controlled laboratory situation, no comparable alcohol dose determinations for violence-heightening effects are available. One critical issue in the analysis of alcohol dose-effect relationships pertains to the use of group statistics. Population samples in virtually all animal species are composed of individuals that show clear-cut aggression-enhancing effects and those that show a reduction in aggressive behavior in the same range of alcohol doses. Individual differences in the aggression-enhancing effects of alcohol are not adequately detected by the use of pooled data and statistical averages. The source of the individual differences in sensitivity to the proaggressive effects of alcohol may eventually Page Share Cite Suggested Citation: Alcohol is a short-acting drug whose early phases of action are associated most often with motor-activating, arousing, euphoric effects that contrast with the dysphoric and depressive effects during the later phases of its action e. Experimental studies on acute alcohol doses and aggressive behavior have focused on the early activating phase of drug action i. Whereas very low alcohol doses 0. Chronic alcohol administration, at intoxicating levels, and aggressive behavior have been investigated in a few methodologically diverse studies in mice, rats, and rhesus monkeys Table 2B. There are several demonstrations of unusual and intense forms of aggressive behavior in stressed animals when given alcohol chronically e. For example, recently Peterson and Pohorecky reported that three daily alcohol administrations caused resident rats to attack and wound intruders more severely by targeting their bites at unusual sites of the opponent. This shift in aggressive behavior appears to indicate a disruption of species-specific ritualized patterns of fighting and an exaggeration to more intense and injurious forms of attack. The evidence on chronic alcohol effects in primates is limited to a few studies that show increased play fighting in juveniles, self-biting in isolation-reared rhesus monkeys, and aggressive displays in pigtail macaques Chamove and Harlow, ; Cressman and Cadell, ; Kamback, Although most relevant to the human situation, the evidence from chronic alcohol studies under controlled laboratory conditions is still preliminary. Violent crimes such as murder, rape, and assaults are prevalent in alcohol-abusing individuals that are diagnosed as alcoholic, as well as those that do not fulfill psychiatric criteria of alcoholism. These overwhelming statistics stem mainly from studies in Scandinavia, the United Kingdom, Australia, Canada, and various localities in the United States, indicating wide generality. The marked correlations between alcoholism and various types of violent acts do not permit, however, any clear insight into the pharmacologic conditions of alcohol exposure that are necessary or sufficient for these violence-promoting effects. Based on verbal recall by convicted felons, Collins and Schlenger indicated that those who were drinking just before the offense were 1. Of course, these and similar types of data based on verbal report are tainted by the amnesic effects of alcohol intoxication. Blood alcohol levels in excess of 0. Unfortunately, blood alcohol levels, if determined at all, frequently refer to values only after considerable time has elapsed since the violent act was performed. A critically limiting issue in studies on alcohol with animals is the way in which the drug is administered. Whereas oral self-administration is the rule in humans, animal studies most often Page Share Cite Suggested Citation: Voluntary intake of alcohol at intoxicating doses has been achieved only in selected experimental preparations in animals e. There is also some indication that distilled beverages are more effective than beer in enhancing aggressive tendencies in laboratory competitive task in humans Pihl et al. As a matter of fact, acute alcohol doses generally decrease testosterone in blood and higher doses also impair the gonadotropic hormones from the pituitary, such as luteinizing hormone LH and follicle-stimulating hormone FSH in animals and in humans Van Thiel et al. That the action of alcohol outside the brain is relevant to the aggression-and violence-increasing effects of this substance is unlikely. Direct experimental investigations of alcohol-androgen interactive effects on aggression were conducted in mice, rats, and squirrel monkeys DeBold

and Miczek, ; Winslow and Miczek, ; Winslow et al. In individuals with experimentally or naturally elevated blood testosterone levels, acute low alcohol doses increase aggressive behavior toward a drug-free opponent. This alcohol-testosterone interaction appears to depend on the actions of testosterone on targets in brain rather than on peripheral sites of action. Males and females differ as to whether or not they engage in violent and aggressive behavior after alcohol see Table 3. However, this difference is chiefly a statistical phenomenon due to social or environmental factors, rather than to endocrine differences. Men and women students differ in their expectations about the aggression-heightening effects of alcohol and about male versus female targets of aggression under the influence of alcohol Page Share Cite Suggested Citation: Epidemiologic data find male and female victims of homicides and suicides associated with alcohol abuse in comparable proportions, although males are much more frequently represented than females Rydelius, ; Schuckit et al. No experimental data exist on human violent behavior that directly compare males and females while under the influence of alcohol. The relationship between high incidences of violent and aggressive behavior in alcoholics and some aspects of brain serotonin metabolism or serotonin receptor regulation has been investigated Table 3 ; e. This correlational research finds some evidence for a link between low cerebrospinal fluid CSF levels of 5-HIAA 5-hydroxyindoleacetic acid and poor impulse control found in some violent alcohol abusers see also discussion of 5-HT in Miczek, Haney, et al. Preliminary data demonstrate that antagonists at the benzodiazepine-GABA-A receptor complex block the aggression-heightening effects of alcohol in rats and monkeys e. At present, these experimental substances have not been explored in humans for their effects on alcohol-enhanced violence or aggression. In a small subgroup of individuals having committed a violent crime or antisocial act, a challenge dose of alcohol produces an Page Share Cite Suggested Citation: Individuals with underlying neurologic disturbances may represent a small proportion of the total number of alcohol-related violent acts. More recently, a study of EEG and event-related potentials ERPs in alcoholics found that the P component of ERPs was reduced in amplitude in alcoholics with a history of violence but not in alcoholics in general Brancheu et al. These studies suggest that there may be some physiologic differences between those few alcohol abusers that become violent and those that never experience any proaggressive effects of alcohol.

## 8: Why does alcohol make some people violent? - Health & Wellbeing

*ALCOHOL - Alcohol abuse is a progressive disorder in which physical dependency can develop. Even low doses of alcohol impair brain function, judgment, alertness, coordination and reflexes. Even low doses of alcohol impair brain function, judgment, alertness, coordination and reflexes.*

No one factor can predict if a person will become addicted to drugs. A combination of factors influences risk for addiction. The more risk factors a person has, the greater the chance that taking drugs can lead to addiction. Gender, ethnicity, and the presence of other mental disorders may also influence risk for drug use and addiction. Although taking drugs at any age can lead to addiction, the earlier that drug use begins, the more likely it will progress to addiction. This is particularly problematic for teens. Because areas in their brains that control decision-making, judgment, and self-control are still developing, teens may be especially prone to risky behaviors, including trying drugs. Can drug addiction be cured or prevented? However, addiction is treatable and can be successfully managed. People who are recovering from an addiction will be at risk for relapse for years and possibly for their whole lives. Research shows that combining addiction treatment medicines with behavioral therapy ensures the best chance of success for most patients. Results from NIDA-funded research have shown that prevention programs involving families, schools, communities, and the media are effective for preventing or reducing drug use and addiction. Although personal events and cultural factors affect drug use trends, when young people view drug use as harmful, they tend to decrease their drug taking. Therefore, education and outreach are key in helping people understand the possible risks of drug use. Teachers, parents, and health care providers have crucial roles in educating young people and preventing drug use and addiction. **Points to Remember** Drug addiction is a chronic disease characterized by drug seeking and use that is compulsive, or difficult to control, despite harmful consequences. This is why drug addiction is also a relapsing disease. Relapse is the return to drug use after an attempt to stop. Relapse indicates the need for more or different treatment. Surges of dopamine in the reward circuit cause the reinforcement of pleasurable but unhealthy activities, leading people to repeat the behavior again and again. Over time, the brain adjusts to the excess dopamine, which reduces the high that the person feels compared to the high they felt when first taking the drug—an effect known as tolerance. They might take more of the drug, trying to achieve the same dopamine high. No single factor can predict whether a person will become addicted to drugs. A combination of genetic, environmental, and developmental factors influences risk for addiction. Drug addiction is treatable and can be successfully managed. More good news is that drug use and addiction are preventable.

## 9: DrugFacts: Understanding Drug Use and Addiction | National Institute on Drug Abuse (NIDA)

*Alcohol-related violence has been making headlines with increasing frequency, but not everyone who drinks alcohol, even to excess, becomes aggressive.*

Top of Page Running away from Violence Sometimes, the impulsivity takes the form of running away. The Drug and Alcohol Dependence journal explained that when children and adolescents run away from home, they usually do so for a number of reasons; chief among those reasons is abuse by family members, which creates a dysfunctional and possibly violent home environment. As many as 80 percent of the homeless youths in America, aged 12 to 17, use drugs or alcohol to cope and survive on the streets. For many of these people, they would rather remain outside than return to homes where violence and trauma await them. The substance abuse may be voluntary, or it may be forced upon them by gangs and human traffickers who see the confused, lonely youths as a medium for sexual exploitation, and who use drugs as a form of coercion and payment. Tragically, the addiction feeds the circumstances surrounding the violent past and current homelessness, and vice versa. According to the National Runaway Safeline, as many as 70 percent of teenagers left their home with no planning or preparation, usually because they had reached a point because the abuse to which they were subjected whether physical, emotional, or sexual had become unbearable, and leaving home was a preferable risk to staying. The Journal of Drug Issues studied substance abuse among adolescents who were runaways, and researchers concluded that teenagers who suffered high levels of violence from their parents or guardians had a higher chance of being dependent on drugs and alcohol when they left home. The shock of being on their own, exposed to the elements without comfort or shelter, and still nursing the physical and psychological wounds of the violence they received played a role in compelling the substance abuse. The world that the teenagers enter is a dangerous one of rampant drug trafficking and human trafficking, where drug and alcohol consumption is a way of life. In the past, street drugs like heroin or cocaine might have been the poison of choice, but in an era where prescription medication is a highly prized commodity on the black market, drugs like OxyContin and Vicodin are the new products. The potent painkillers numb physical pain and induce such strong states of tranquility and drowsiness that many people suffering stress or trauma lose themselves in the narcotic daze. Almost a quarter of the youths forced out of their homes in Los Angeles in abused prescription medication. The researchers writing in the journal point out that there is far more to violent behavior than simply drugs and alcohol; there are widespread socioeconomic factors to consider such as the systemic violence of drug distribution networks, or the economic compulsive violence of using force to obtain drugs or the money to buy drugs, the setting and environment in which people obtain and use drugs, and the unique biological and psychological processes that drive every aspect of human behavior and interpersonal interactions. Laboratory and research studies suggest that alcohol has a causal role to play in violent behavior, but the degree of that role is significantly varied. The same applies to stimulants like cocaine and amphetamines. Some of the socioeconomic factors include crime. Similarly, the Bureau of Justice Statistics noted in that approximately 3 million violent crimes take place every year where the offenders were drinking at the time of the incident. Other statistics show that half of all murders and assaults take place when the perpetrator or the victim or both was drinking. Alcohol also tends to be a factor in violence when the attacker and the victim are acquainted with one another. As much as 66 percent of victims who were assaulted by an intimate partner a term that includes a current or former spouse, boyfriend, or girlfriend told police and emergency services that alcohol was consumed before or during the attack. By contrast, only 31 percent of violent attacks involving alcohol were carried out by strangers. Figures show that almost 70 percent of cases of violence between the intimate partners of a relationship involve attackers who had been drinking before the abuse started; 25 percent of episodes of family violence not counting spouses and 15 percent of such instances with acquaintances involved alcohol. Use-related Crimes Use-related crimes are the results of what happens when people who consume drugs act violently and unpredictably due to the behavioral and psychological effects of the drug. System-related Crimes System-related crime entails crimes that are borne from the structures of the drug system. In Mexico, as many as 100,000 people have been killed since in the stalemate between rival cartels and the

Mexican and American governments. **Top of Page Driving while Impaired** Perhaps the most well-known form of drug- or alcohol-fueled violence is driving while intoxicated, the third most frequently reported crime in the United States. Every year, over 1 million people are arrested for getting behind the wheel while impaired; driving under the influence is the number one cause of death, injury, and disability for people aged 21 and under. Almost 30 percent of all traffic deaths are related to one or more drivers being drunk at the time of the accident, according to the Centers for Disease Control ; the National Institutes of Health notes that the figure was as high as 60 percent in the mids. In , the National Highway Traffic Safety Administration reported that one in eight nighttime drivers tested positive for having illegal drugs in their system while behind the wheel; a survey found that one in eight high school seniors admitted to driving after smoking marijuana. The rising popularity of marijuana, lax enforcement standards, and recreational legality in some jurisdictions have pushed state and local transportation departments to come up with various ways to ensure that drivers who are too high do not pose a threat to other motorists, even as some research has shown that states with some measure of marijuana regulation have lower rates of traffic deaths. Marijuana is not the only drug that some drivers are consuming before driving. Many patients who are on courses of opioid or benzodiazepine medication prescribed for anxiety, chronic pain, or insomnia make the mistake of driving while feeling the sedative effects of the drugs. Police are stymied because prescription medication affects different people in different ways, so there is no consensus on how much of a drug a person can have before driving becomes too dangerous. **Top of Page Drug-Induced Violence on College Campuses** Drug use is a significant problem on college campuses, but when it comes to students aged , alcohol is still the number one poison. More than , students every year are assaulted by a drunk student, and 95 percent of all the violent crime that takes place on college property involves either the attacker, the victim, or both being drunk at the time. For this reason, many colleges have redefined and refocused their alcohol consumption and serious crime laws , stepping up enforcement and punishment of alcohol-related offenses that directly threaten the wellbeing of their students. Last updated on November 6, T

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