The Effects of Alcohol & Drugs on the Body

**Alcohol**

Alcohol is a central nervous system depressant found in beer, wine, hard liquor and in some over-the-counter medications (for example: some allergy and cold medications).

Considered a recreational beverage when consumed in moderation for enjoyment and relaxation during social gatherings, alcohol is widely abused primarily due to its social acceptance and availability. “Abuse” occurs when it is used primarily for its physical and mood-altering effects.

Many factors contribute to levels of alcohol absorption, rates of metabolism, and intoxication. Among them are: body size and weight, food ingested, gender, physical condition, and other drugs or medications in the body. Impairment begins with one drink.

Signs and symptoms of alcohol abuse include constricted pupils, slurred speech, a sleepy or stuporous condition, lack of coordination, slowed reactions, and the odor of alcohol on the breath.

Headaches, nausea, dehydration, unclear thinking, unsettled digestion and aching muscles are associated with overindulgence (hangover).

While beer, wine, and hard liquor are considered recreational beverages when consumed in moderation, our bodies view alcohol as a poison that needs to be expelled. And when alcohol is abused, our bodies can’t expel it fast enough, causing damage to critical organs.

Over time, chronic* consumption of alcohol may result in:

- Liver damage;
- Inflammation of the esophagus;
- Aggravation of peptic ulcers;
- Acute and chronic pancreatitis;
- Malabsorption of food nutrients that may lead to malnutrition;
- Heart attack;
- Hypertension;
- Stroke;
- Immune system depression (makes body more susceptible to infections);
- Cancers of the liver, esophagus, nasopharynx or larynx; and
- Brain damage (dementia, blackouts, seizures, hallucinations, peripheral neuropathy).

*Chronic consumption of alcohol = Average of three servings per day of 12 ounces of beer, 1-1/2 ounces of whiskey or 5 ounces of wine.
How Alcohol Impairs Functions Needed for Driving:

Because it takes subtle and complex skills to operate a motor vehicle safely, people are susceptible to impairment from even low doses of alcohol. The evidence linking alcohol and transportation accidents is supported by experimental studies conducted by the National Institute on Alcohol Abuse and Alcoholism, relating the effect of alcohol on specific driving-related skills.

What is Impairment?

Impairment is related to alcohol in terms of its concentration in the bloodstream. For example, a blood alcohol concentration (BAC) of 0.04 percent might be achieved by a 150-pound man consuming two drinks in one hour.

Impaired Attention Span

Drivers must divide their attention among many skills in order to keep a vehicle in the proper lane while monitoring the environment for vital safety information, such as other vehicles, traffic signals and pedestrians. Results of numerous studies show that a deficit in the ability to divide attention may occur at 0.02 percent BAC.

Impaired Visual Tracking/Perception

In driving, the eyes must focus briefly on important objects in the visual field and track them as they move (along with the vehicle). Low to moderate BACs (0.03 to 0.05 percent) interfere with voluntary eye movements, impairing the eye’s ability to rapidly track a moving target.

Impaired Reaction Time

Steering is a complex psychomotor task. A delay in the body’s eye-to-hand reaction time is compounded by the visual effects described above, causing significant impairment in steering ability at about 0.035 percent BAC.

Impaired Information Processing

Alcohol impairs nearly every aspect of the brain’s information processing. Alcohol-impaired drivers require more time to read street signs or respond to traffic signals than unimpaired drivers. As a result, impaired drivers tend to look at fewer sources of information. A narrowing of the field of attention begins at about 0.04 percent BAC.

Marijuana

Marijuana is a mind-altering drug that is used for its mildly tranquilizing, mood and perception altering effects. It alters the brain’s interpretation of incoming messages. It causes problems with memory and learning, difficulty in thinking and problem-solving, and a loss of concentration.
Marijuana alters a person’s sense of time and significantly diminishes reflexes, reaction time, and coordination.

Signs and symptoms of marijuana use include reddened eyes, flushed face, slowed speech, an irritating cough, and chronic sore throat. A distinctive, pungent odor on clothing (aroma of alfalfa combined with incense) is another sign of marijuana use.

Marijuana use can cause dizziness, nausea, tremors, an inability to concentrate, anxiety, confusion, rapidly changing emotions, and erratic behavior.

Use of marijuana weakens the immune system, and raises the risk of lung infections. Long-term use of marijuana can result in serious health problems including bronchitis, emphysema, cancer, and brain damage.

**How Marijuana Impacts Functions Needed for Driving:**

Marijuana chemically alters the brain and gross motor functioning of the body, having a direct impact on the complex system of critical thinking skills and reflexes that allow people to drive safely and conscientiously.

Marijuana use also affects perception. This impairs an individual’s ability to detect signals and follow moving objects with the eyes.

**Cocaine**

Cocaine is an intense, euphoric-producing stimulant drug that directly affects the brain. Cocaine is highly addictive. It makes the user feel euphoric, energetic, and mentally alert.

Signs and symptoms of cocaine use include dilated pupils, profuse sweating, dry mouth, a runny or irritated nose, talkativeness, tremors, and muscle twitches.

Cocaine use can cause increased blood pressure and heart rate, vertigo, insomnia, fatigue, loss of appetite, anxiety, and agitation.

Cocaine is highly addictive and causes users to have difficulty in controlling their use of the drug. Long-term use of cocaine can lead to cardiac arrhythmias, sudden cardiac arrest, convulsions, strokes, and possibly death.

**How Cocaine Impacts Functions Needed for Driving:**

Cocaine chemically alters the brain and gross motor functioning of the body, having a direct impact on the complex system of critical thinking skills and reflexes that allow people to drive safely and conscientiously.
Amphetamines and Methamphetamines

Amphetamines and methamphetamines are stimulants that speed up the body’s system. The effects of these drugs are similar to cocaine, but their onset is slower and their duration is longer. They are abused for the physical sense of energy at lower doses and the mental exhilaration at higher doses.

Signs and symptoms of the use of amphetamines and methamphetamines include dilated pupils, profuse sweating, difficulty focusing eyes, talkativeness, loss of coordination, lack of focus, poor memory, exaggerated reflexes, and tremors.

Use of amphetamines or methamphetamines can cause rapid breathing and heart rate, irregular heartbeat, increased blood pressure and pulse rates, headaches, dizziness, insomnia, and hyperthermia (overheating).

High doses can result in stroke, heart attack, multiple organ problems caused by overheating, convulsions and possibly death.

How Amphetamines and Methamphetamines Impact Functions Needed for Driving:

Amphetamines and methamphetamines chemically alter the brain and gross motor functioning of the body, having a direct impact on the complex system of critical thinking skills and reflexes that allow people to drive safely and conscientiously.

Opiates

Opiates are a class of narcotics that cause a strong euphoric feeling. Opiates include opium, heroin, morphine, codeine, and many synthetic drugs used to alleviate pain, depress body functions and reactions.

Most medical problems associated with the use of opiates are caused by uncertain dosages, unsterile needles, contamination of the drug, or from combining the narcotic with other drugs.

Signs and symptoms of the use of opiates include constricted pupils, impaired vision, a warm flushing of the skin, sweating, impaired coordination, nausea, vomiting, poor coordination, slurred speech, and slowed reflexes.

Use of opiates can cause drowsiness, impaired mental function and alertness, mood changes, and depression.

High doses can result in lowered blood pressure, slow breathing, seizures, convulsions, loss of consciousness, coma, and death.
How Opiates Impact Functions Needed for Driving:

Opiates chemically alter the brain and gross motor functioning of the body, having a direct impact on the complex system of critical thinking skills and reflexes that allow people to drive safely and conscientiously. The feeling of apathy created by opiates can translate to careless driving practices. The physical effects can impede driver reaction time, raising the risk of accidents.

Phencyclidine (PCP)

Phencyclidine (PCP) acts as both a depressant and a hallucinogen, and sometimes as a stimulant. PCP scrambles the brain’s internal stimuli and alters how users see and deal with their environment. Routine activities like driving and walking become very difficult.

Signs and symptoms of use include dilated or floating pupils, jerky eye movement, thick or slurred speech, profuse sweating, dizziness, drowsiness, severe confusion and agitation, poor coordination, and impaired physical coordination.

Use of PCP can cause anxiety, panic, aggressive or violent behavior, disorganization, and poor judgment.

High doses can result in depression, irreversible memory loss, psychosis, coma, and death.

PCP chemically alters the brain and gross motor functioning of the body, having a direct impact on the complex system of critical thinking skills and reflexes that allow people to drive safely and conscientiously. It also causes severe disorientation. PCP-caused distortions in perception make driver performance unpredictable and dangerous.

Over-the-Counter and Prescription Medications

Over-the-counter medications, and even prescription medications, may interfere with your ability to drive safely and within the requirements of the alcohol and drug regulations. Make sure you know about the possible side effects of these drugs before taking them—especially before driving. Consult your physician if you have any questions about a prescription and read the ingredients label and directions for use on every over-the-counter drug you use.