

SAFETY



FEATURES

The Effects of Alcohol and Other Drugs

There has been a lot of research on how alcohol affects car drivers. Much less has been done on the effect of alcohol on motorcyclists' riding skills. But, most motorcyclists would agree that it takes more coordination and alertness to ride a motorcycle than it does to drive a car. And, there is a greater chance of being injured on a motorcycle as the result of other drivers' mistakes.

Car driving skills, such as visual sharpness, reaction time and general awareness are hindered by alcohol. Motorcyclists need these skills even more than car drivers. Which leads to one conclusion: drinking before riding a motorcycle is a big risk. Using other drugs before riding also can be hazardous.

The Effects of Alcohol

Alcohol is a depressant and acts as a sedative on the brain. Although many people feel stimulation when drinking, this is indirect. Even a small amount of alcohol causes depression of those parts of the brain that control judgment, self-control and inhibition. The release from inhibition causes the feeling of stimulation. As greater amounts of alcohol enter the system, the parts of the brain controlling coordination and physical reflexes become depressed.

Regardless of the source, when alcohol enters the blood system the effects are the same. One standard-size drink, whether it is a 12-ounce beer, a five-ounce glass of wine, or a cocktail, equals a half ounce of pure alcohol. Many people think a beer contains less alcohol than a standard mixed drink. This is because it usually takes longer to drink beer than it does a cocktail. And, beer is much more filling. Also, cocktails sometimes are mixed stronger than a standard drink, making them equal to two normal servings of beer or wine.

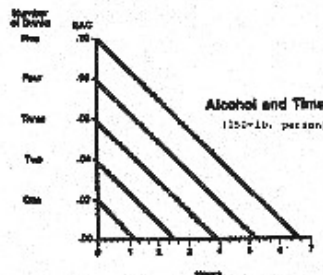
Alcohol affects people differently. A heavy drinker may show few physical signs of drunkenness, but the effect on the brain is the same as it is for a light drinker. A motorcyclist show-

ing no outward signs of intoxication may still be unable to ride safely.

A physically large person can have two drinks and only be affected moderately, while a smaller person could become quite intoxicated on the same amount. Smaller people have less blood in their system, so after one drink the percentage of alcohol in their blood, or their blood alcohol concentration (BAC), will be higher than it would be for a larger person. A BAC of .10 means that the blood system contains about one-tenth of one percent of alcohol. In most states, a person with a BAC of .10 is legally intoxicated; impairment, however, starts long before this BAC is reached.

Once a person's BAC is at any level, it can only be reduced by allowing the liver time to oxidize the alcohol. Showers and coffee don't make you sober. Only time will do that. Showers and coffee may make a person feel more awake, but they don't reduce drunkenness.

There are ways to help slow down alcohol absorption in the blood. Probably the best way is to simply drink slower. Make sure your drinks are measured, so that you aren't consuming more alcohol than your body can handle. Keep control of the pace with which you drink, making sure that your BAC is not rising to a dangerous level.



The chart above shows, for a 150-lb. person, the BAC for each drink, how BAC decreases over time, and the number of hours it takes for the body to get rid of different numbers of drinks.



“ ”

As the chart shows, most of the vital riding skills begin to deteriorate after only one drink. Three to four drinks cause further impairment and loss of efficiency, and after about five drinks the motorcyclist's basic coordination begins to fall.

University of Southern California researcher Harry Hurt's study of 900 motorcycle accidents showed that nearly 12 percent involved alcohol and some degree of impairment. The study showed that injury severity increased for those riders drinking alcohol. Almost half of the fatal accidents studied involved riders who had been drinking.

Other studies show that motorcyclists who have been drinking are involved in many more single-vehicle accidents than sober riders. The drinking rider also is overrepresented in accidents where another vehicle violates the motorcyclist's right of way. This points to a lack of awareness and judgment on the part of the motorcyclist; these two mental processes can be impaired after a single drink.

Differences Between Alcohol and Other Drugs

Alcohol is considered a drug. Although some comparisons can be made between alcohol and other drugs, for the most part alcohol is unique. It is a single substance with a simple chemical structure. Its action inside the body is fairly simple and easy to understand. It's rarely used for medical purposes. And, although it's often abused, it's a legal drug usually approved of by society.

Other drugs may include many substances. Most are products of modern chemistry. Their action in the body is usually much more complex than that of alcohol. Unlike alcohol, which "burns off" after being in the blood system for a while, other drugs remain in the body for long periods of time. Sometimes a drug's effects may continue after it can no longer be detected in the blood. In other cases, a drug may be detected in the blood after its action has stopped.

Illegal drugs are not the only ones that can impair your ability to ride a motorcycle. Many

DRUGS AND MOTORCYCLE RIDING

Type of Drug	Names	Why Taken	Effects	Riding Skills Impaired
Depressants	Sedatives, barbiturates, tranquilizers, e.g., quaalude, librium, red devils, PCP, angel dust	Escape boredom, self-consciousness, inhibitions	Confusion, lack of coordination, depression, drunken appearance, slurred speech, quick temper	Every vital riding skill
Stimulants	Cocaine (coke, snow), speed, bennies, dexies, crystal, amphetamines, benzedrine	To increase alertness, thrills, self-confidence, stay awake, weight loss	Self-confidence, alertness, often followed by depression and extreme fatigue when drug wears off	Judgment of riding environment, road surface awareness, perception of other vehicles, turning speed selection, defensive riding ability
Marijuana	Grass, weed, pot, joint	Sense of euphoria, relaxation, well-being	Altered time/space perception, fragmented thought, poor glare recovery, increased reaction time, impaired immediate memory	Road surface awareness, scanning, perception of other vehicles, night vision, turning speed selection, braking, defensive riding abilities, evasive maneuvering
Heroin	H, horse, smack, scag	Escape reality or mental and physical problems	Tingling, drowsiness, day-dreaming, stupor, physical addiction	Every vital riding skill

Food will help slow the rate at which your body absorbs alcohol. High-protein foods such as cheese and meats are especially good because they stay in the stomach longer. If you are drinking alcohol, it is a good idea to eat high-protein food such as crackers and cheese, deviled or hard-boiled eggs, pizza, raw vegetables with dip, seafood or meats.

Body weight and the amount of food or liquids in the stomach affect how quickly alcohol is absorbed in the blood system, but not the amount

absorbed. All the alcohol still gets in the blood. Eating will slow down alcohol absorption, but it won't prevent those who drink too much from getting intoxicated.

Most motorcyclists believe they can have a few drinks without affecting their riding skill. But, even at moderately low levels, alcohol can affect vision, coordination and ability to react; skills critical to safe motorcycling. The chart below lists important riding skills and the relative amount of alcohol that impairs these skills.



one to two drinks in system—

Mental processes such as restraint, awareness, concentration and judgment affected; reaction time slowed; inability to perform complicated tasks.



three to four drinks in system—

Depth perception, glare recovery, eye movement and focus affected; decreased judgment and control.



five drinks in system—

Coordination deteriorates, loss of critical judgment, impaired memory and comprehension.

NUMBER OF DRINKS THAT IMPAIR VITAL MOTORCYCLING SKILLS



Braking

Reacting to environment

Road surface awareness

Turning speed selection

Lane positioning

Defensive riding abilities

Evasive maneuvering



Scanning

Night vision

Shifting

Throttle control

Balance

Signaling

Lean during turn

prescription drugs have adverse effects on a motorcyclist's riding skills. Even over-the-counter drugs such as cold tablets and allergy remedies can lessen a cyclist's riding ability.

The Effects of Other Drugs

There has been a lot of study done on the effects of drugs on driving behavior, but not much relating drug use to motorcycle accidents. As with alcohol, however, it can be easily assumed that the adverse effects of some drugs on driving behavior will be magnified when riding a motorcycle. The chart on the preceding page lists common drugs, how they affect behavior, and the cycling skills that would be impaired by using the drug before riding.

In addition to the drugs listed on the chart, motorcyclists should be aware of prescription and over-the-counter drugs that contain warnings to motor vehicle drivers. Even a cold tablet can reduce vision, alertness and perception.

Regardless of whether it is an "upper," a "downer," a beer or a shot of whiskey, all drugs have immediate or delayed effects which impair

mental or physical processes—many affect both. These processes are important for all cyclists, but even more so for motorcyclists. The ordination and awareness needed to ride a motorcycle safely allow no room for impairment of any kind.

Most people ride motorcycles because they enjoy close contact with the machine and riding environment. Use of alcohol and other drugs before riding a motorcycle can only inhibit the intimate relationship between the motorcyclist, the machine and the road.



MOTORCYCLE SAFETY FOUNDATION

P.O. Box 120
Chadds Ford, Pennsylvania 19317

THE EFFECTS OF ALCOHOL AND OTHER DRUGS

There has been a lot of research on how alcohol affects car drivers. Much less has been done on the effect of alcohol on motorcyclists' riding skills. But, most motorcyclists would agree that it takes more coordination and alertness to ride a motorcycle than it does to drive a car. And, there is a greater chance of being injured on a motorcycle as the result of other drivers' mistakes.

Car driving skills, such as visual sharpness, reaction time and general awareness are hindered by alcohol. Motorcyclists need these skills even more than car drivers. Which leads to one conclusion: drinking before riding a motorcycle is a big risk. Using other drugs before riding also can be hazardous.

The Effects of Alcohol

Alcohol is depressant and acts as a sedative on the brain. Although many people feel stimulation when drinking, this is indirect. Even a small amount of alcohol causes depression of those parts of the brain controlling coordination and physical reflexes become depressed.

Regardless of the source, when alcohol enters the blood system the effects are the same. One standard-size drink, whether it is a 12-ounce beer, a five-ounce glass of wine, or a cocktail, equals a half ounce of pure alcohol. Many people think a beer contains less alcohol than a standard mixed drink. This is because it usually takes longer to drink beer than it does a cocktail. And, beer is much more filling. Also, cocktails sometimes are mixed stronger than a standard drink, making them equal to two normal servings of beer or wine.

Alcohol affects people differently. A heavy drinker may show few physical signs of drunkenness, but the effect on the brain is the same as it is for a light drinker. A motorcyclist showing no outward signs of intoxication may still be unable to ride safely.

A physically large person can have two drinks and only be affected moderately, while a smaller person

could become quite intoxicated on the same amount. Smaller people have less blood in their system, so after one drink the percentage of alcohol in their blood, or their blood alcohol concentration (BAC), will be higher than it would be for a larger person. A BAC of .10 means that the blood system contains about one-tenth of one percent of alcohol. In most states, a person with a BAC of .10 is legally intoxicated; impairment, however, starts long before this BAC is reached.

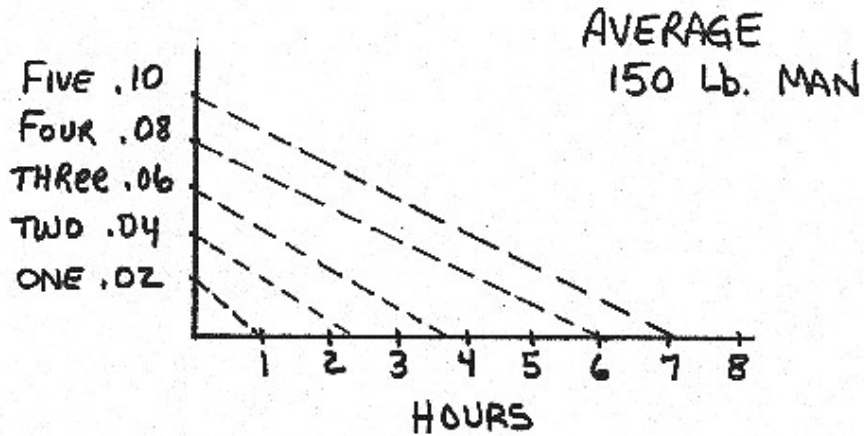
Once a person's BAC is at any level, it can only be reduced by allowing the liver time to oxidize the alcohol. Showers and coffee don't make you sober. Only time will do that. Showers and coffee may make a person feel more awake, but they don't reduce drunkenness.

There are ways to help slow down alcohol absorption in the blood. Probably the best way is to simply drink slower. Make sure your drinks are measured, so that you aren't consuming more alcohol than your body can handle. Keep control of the pace with which you drink, making sure that your BAC is not rising to a dangerous level.

Food will help slow the rate at which your body absorbs alcohol. High protein foods such as cheese and meats are especially good because they stay in the stomach longer. If you are drinking alcohol, it is a good idea to eat high protein foods such as crackers and cheese, deviled or hard boiled eggs, pizza, raw vegetables with dip, seafood or meats. Body weight and the amount of food or liquids in the stomach affect how quickly alcohol is absorbed in the blood system, but not the amount absorbed. All the alcohol still gets in the blood. Eating will slow down the alcohol absorption, but it won't prevent those who drink too much from getting intoxicated.

Most motorcyclists believe they can have a few drinks without affecting their riding skill. But, even at moderately low levels, alcohol can affect vision, coordination and ability to react, skills critical to safe motorcycling.

EFFECTS of ALCOHOL



BRAKING, LANE POSITIONING
ROAD SURFACE AWARENESS
EVASIVE MANEUVERING



SCANNING, SHIFTING
NIGHT VISION
THROTTLE CONTROL



CRITICAL JUDGEMENT
LEAN ANGLE
BALANCE