

Unit 10: Alcohol and Drugs

Purpose: Acquaint the student with the effects of alcohol and drugs on driving performance, how the law treats driving under the influence, and how to avoid accidents involving alcohol and drugs.

Section	Issue	Learning Objective	References
10.A Alcohol and its effect on driving	10.A.01 Alcohol, definition	10.A.01(1) An understanding of the nature and effects of alcohol is an essential prerequisite to an understanding of the problems posed by alcohol for highway safety. Alcohol continues to be the most misused drug in the Nation.	
		10.A.01(2) Alcohol is a colorless chemical present in fermented or distilled liquors that affects the entire central nervous system, cognitive function, and judgement and is deadly if too much is consumed. "Ethyl" alcohol is the principal active ingredient of alcoholic beverages.	
		10.A.01(3) Although it is often perceived to be a stimulant, alcohol is actually a depressant. The apparent stimulation that is commonly experienced particularly at lower levels of ingestion, is actually the result of a depression of the mechanisms within the brain that normally moderate behavior. After drinking alcohol, you may initially feel euphoric and stimulated but later feel sleepy and sedated.	
	10.A.02 Alcohol, effects on brain	10.A.02(1) When ingested, alcohol is quickly absorbed from the gastrointestinal tract and carried by the blood to all parts of the body, including the brain.	
		10.A.02(2) Brain damage is a common and potentially severe consequence of long-term, heavy alcohol consumption. Even mild-to-moderate drinking can adversely affect cognitive functioning (i.e., mental activities that involve acquiring, storing, retrieving, and using information). When consumed, alcohol passes through the three main areas of the brain. These are: the forebrain, the midbrain, and the hindbrain.	

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		10.A.02(3) The forebrain controls judgment and reasoning. It is in this area that the alcohol “high” is created. Caution, common sense, reasoning, and inhibitions are reduced when this area of the brain is exposed to alcohol.	
		10.A.02(4) The midbrain regulates muscular control. Coordinated movement is adversely affected by alcohol in this part of the brain.	
		10.A.02(5) The hindbrain controls involuntary bodily functions such as respiration (breathing) and heart rate. High levels of alcohol lead to depression of respiration and heart rate and can depress these functions to the point of causing death.	
		10.A.02(6) Alcohol depresses the body’s immune system making it easier to get sick.	
		10.A.02(7) Alcohol is a depressant that slows brain activity down. While one or two drinks makes most people feel relaxed, more alcohol may cause feelings of anxiety, depression, and often aggression.	
		10.A.02(8) No stimulant or other drug, including caffeine, has yet been shown to reverse the principal effects of alcohol to any significant degree.	
10.A.03	Alcohol, tolerance	10.A.03(1) Tolerance means that after continued drinking, consumption of a constant amount of alcohol produces a lesser effect. Therefore, increasing amounts of alcohol are necessary to produce the same effect.	National Institute on Alcohol Abuse and Alcoholism (NIAAA) “Alcohol Alert” 2004




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		10.A.03(2) Alcohol consumption interferes with many bodily functions and affects behavior. However, after chronic alcohol consumption, the drinker often develops tolerance to at least some of alcohol's effects.	
		10.A.03(3) Tolerance may encourage increased alcohol consumption, contributing to: alcohol dependence and organ damage; degraded performance of tasks, such as driving, while under the influence of alcohol; ineffectiveness or toxicity of other drugs and medications, and increased risk for alcoholism.	
10.A.04	Alcohol, BAC	10.A.04(1) BAC is an abbreviation of "blood alcohol concentration" and is expressed in terms of the percentage of alcohol in your blood by weight of alcohol (i.e., 0.08% BAC). The concentration of alcohol in blood or other body fluids including breath and urine, is most commonly expressed as "mg per 100 ml," which means milligrams of alcohol per 100 milliliters of fluid. So, a person with a BAC of 0.08% would have 8 milligrams of alcohol per 100 milliliters of body fluid. We are most concerned with the concentration of alcohol in the brain, which is directly determined by the concentration in the blood.	CDH: p. 65
		10.A.04(2) The BAC is a far more precise measure of alcohol effects or impairment than is trying to gauge impairment by the "number of drinks," of whatever variety was consumed.	
		10.A.04(3) Figure 10.1 presents a Blood Alcohol chart that you can use to estimate at what point you risk being over the legal per se limit. You could be arrested for DUI and convicted at even lower BAC levels if you are demonstrating impairment at a lower BAC level. Under the zero tolerance law, drivers under age 21 are detained (and under some circumstances may be arrested) with a BAC as low as .01%.	

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		<p>10.A.04(4) Since judgement and reasoning are among the attributes that are immediately impaired by even low levels of alcohol ingestion, and because you generally don't know your metabolism rate, body-weight-to-water ratio, or the exact amount or alcohol content of what you consumed, there is no practical way to accurately gauge your own BAC or level of impairment. There is a tendency to underestimate your own BAC level, especially when the level is falling i.e., alcohol is being eliminated from the blood. Studies show that the higher the BAC, the less accurate you are in assessing your own BAC level.</p>	
10.A.05	Alcohol, behavioral and physiological effects at different BAC levels	<p>10.A.05(1) 0.02%–0.04% BAC: Relaxed, onset of impaired complex reaction time and divided attention.</p> <p>0.04% BAC: Impaired simple reaction time.</p> <p>0.05% BAC: Euphoric, relaxed and friendly, may feel more sociable than usual. Impaired tracking, skilled psychomotor tasks, and ocularmotor control.</p> <p>0.07%–0.08% BAC: Talkative, excited and sociable. Impaired divided attention, information processing, driving-specific tasks (steering, braking, speed control, lane tracking, gear changing, judgements of speed and distance).</p> <p>0.09%–0.10% BAC: Loss of physical coordination, slurred speech and loss of inhibitions. Impaired concentrated attention and perception.</p> <p>0.12% BAC: Unrestrained behavior, lack of control and pronounced loss of judgment.</p> <p>0.20% BAC: Loss of alertness, onset of drowsiness and lethargy.</p> <p>0.30% BAC: Stupor or comatose state.</p> <p>0.40% BAC: Suppression of respiratory function, erratic heartbeat-can be fatal.</p> <p>0.50% BAC: Death is very likely to occur.</p>	

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		10.A.05(2)	Most laboratory studies of alcohol and driving related skills conclude that most, but not all, driving related skills become significantly impaired at BAC levels well below .08%.
		10.A.05(3)	Some critical skills including reaction time, tracking ability, skilled psychomotor tasks, and ocularmotor control, become impaired at BAC levels at or below .05%.
		10.A.05(4)	When a person consumes 12 drinks, he or she could reach a BAC level as high as 0.5%. Breathing and heart functions may become so depressed that they cease, and death can result from this level of intoxication.
	10.A.06 Alcohol, content of beverages	10.A.06(1)	Beer can exceed 5% alcohol, wine is typically 12% alcohol, and distilled spirits are typically at least 40% alcohol.
		10.A.06(2)	There is typically the same amount of alcohol in a twelve ounce can of beer, a five ounce glass of wine, and a drink containing one shot (1 1/2 ounce) of an 80 proof distilled spirit.
 One 1 oz. shot of whisky	 One 5 oz. glass of wine	 One 12 oz. mug of beer	
	10.A.07 Alcohol, metabolism	10.A.07(1)	Through oxidation, alcohol is metabolized or processed by enzymes, which are body chemicals that break down other chemicals. Through this process alcohol is detoxified and removed from the blood, preventing the alcohol from accumulating and destroying cells and organs.

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		10.A.07(2) A minute amount of alcohol escapes metabolism and is excreted unchanged in the breath and urine. This permits alcohol concentration to be measured from samples of the breath or urine. Until all the alcohol consumed has been metabolized, it is distributed throughout the body, affecting the brain and other tissues.	
		10.A.07(3) Alcohol metabolizes more slowly than it is absorbed. Since the metabolism of alcohol is slow, consumption needs to be controlled to prevent accumulation in the body and intoxication.	
10.A.08	Alcohol, how it is processed	10.A.08(1) When you take a drink, the alcohol is absorbed into the linings of the stomach and small intestine and passes from the stomach and intestines into the blood, a process referred to as absorption. It is promptly disseminated by the bloodstream to parts of the body, including the brain.	
		10.A.08(2) About 5% of the alcohol you consume is absorbed in your mouth and throat and 95% is absorbed in the digestive system.	
		10.A.08(3) When alcohol is ingested and reaches the stomach and the intestines, several factors determine the rate at which it enters the blood. These include the rate at which the alcohol is ingested; the total amount consumed; its concentration; the characteristics and amount of other foods and other beverages also present; the weight and gender of the individual; and, the rate at which the body eliminates the alcohol, both metabolically and by excretion (the latter chiefly in breath and urine).	

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	10.A.08(4)	Ethanol is water soluble and fat insoluble. On average, men are composed of 58.3% water and women somewhat less, 48.5% water. This means that women absorb and metabolize alcohol differently from men. The alcohol in a woman's body will be more concentrated since she has less body water. Women will generally have higher BAC's after consuming the same amount of alcohol as men and are more susceptible to alcoholic liver, heart, and brain damage.	
	10.A.08(5)	Most of the alcohol consumed, about 90%, is slowly eliminated by your liver through oxidation. Only 2% to 5% is passed unchanged by body functions, less than 10% is eliminated by kidneys, lungs and skin. Alcohol cannot be retained in your body's tissue without serious health effects.	
	10.A.08(6)	The liver can metabolize only a certain amount of alcohol per hour, regardless of the amount that has been consumed. The rate of alcohol metabolism depends, in part, on the amount of metabolizing enzymes in the liver, which varies somewhat among individuals. In general though, after the consumption of one standard drink, the amount of alcohol in your blood peaks within 30 to 45 minutes.	
	10.A.08(7)	Examples of the relationship between alcohol ingestion and BAC: Drinking between one and two hours after an average meal, if an individual weighing 150 pounds were to consume in one hour four and a half ounces of 80 proof liquor (40% by volume), his blood alcohol concentration would reach roughly 50 mg per 100 ml (0.05% by wt). Similarly, under the same conditions, for 100- and 200-pound individuals the corresponding amounts of 80 proof liquor to reach 50 mg per 100 ml (0.05% by wt) would be slightly more than three ounces, and six ounces, respectively.	

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10.A.09	Motivation for drinking and driving	10.A.09(1)	In a survey of repeat offenders conducted in 1996, it was found that over 32% reported that they drove after drinking (leading to their subsequent arrest) because they thought they would drive sufficiently well. 21% reported that they just didn't think about it. Over 14% said there was no one else who could drive, 18.6% said they lack control of him/herself after drinking, and nearly 14% said they thought they would be OK to drive if they were careful to avoid arrest or accident.	Wiliszowski, Murphy, Jones et al., 1996.
		10.A.09(2)	A 2002 survey of young drivers aged 19 to 25 conducted by the California Office of Traffic Safety found that 34% of the respondents reported ever driving after drinking and 17% reported driving after they believed it was unsafe for them to drive. Survey respondents who had too much to drink and thought they couldn't drive home safely typically drove themselves home anyway.	
		10.A.09(3)	The survey results showed that respondents across all age, gender, and ethnic/racial groups report that the factor that would keep them from driving after drinking would be the presence of a sober friend or relative.	
10.A.10	Alcohol, how it affects your driving, introduction	10.A.10(1)	Alcohol degrades individual driving performance in many ways, including deterioration in judgment and reasoning, awareness, comprehension, concentration, vision, coordination, and reaction time.	
		10.A.10(2)	Judgement: Important impairing effects of alcohol that influence a drinker's decision to drive after drinking include having limited knowledge of the impairing effects of alcohol or a misinterpretation of the cues of impairment, a reduction of inhibitions at higher BAC levels, a lowered perception of alcohol-crash risk, and a neglect of social norms after drinking.	

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		10.A.10(3) The ability to concentrate on two activities simultaneously is affected at very low BACs. For instance, difficulty in staying on the road may be corrected by sacrificing attention to signal lights.	
		10.A.10(4) Alcohol (a) diminishes your ability to identify hazards, (b) diminishes your ability to make a correct decision once a hazard is identified, and (c) slows your reaction time even if the correct decision is made. If you are under the influence of alcohol you may be unable to handle an emergency situation that requires quick decision making and reflexes.	
		10.A.10(5) Depending on your weight and how soon you drive after drinking, as little as one drink can make you an unsafe driver. It is unlawful for drivers under the age of 21 to drive with any amount of alcohol in their system.	CDH: p. 64
10.A.11	Alcohol, how it affects your driving, perception and judgment	10.A.11(1) Ability to make rapid and correct judgments is of major importance in driving. Even very low levels of alcohol (as low as .02%) have been shown to adversely affect the judgment of experienced bus drivers trying to negotiate a bus through a narrow passage. The degradation of judgement is likely greater in younger, less experienced, or less skilled drivers.	
		10.A.11(2) Distance, depth, and speed perception are all affected by the consumption of alcohol.	
		10.A.11(3) To steer and brake smoothly and appropriately, a driver needs to be well coordinated and must know where other cars are around him or her and how fast they are going.	
		10.A.11(4) Many alcohol-related crashes occur at high speeds because the drivers who were drinking had no sense of how fast they were going.	

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10.A.12	Alcohol, how it affects your driving, awareness	10.A.12(1)	Alcohol impaired drivers tend to stare rather than scan. This can significantly impair your awareness of other vehicles and developing traffic situations.	
		10.A.12(2)	Alcohol impaired drivers have difficulty performing more than one task at a time, which is a serious driving impairment since you must be able to perform multiple tasks to stay safe behind the wheel.	
		10.A.12(3)	Alcohol impaired drivers often forget to perform important driving tasks such as turning on or dimming their headlights that lead to crash involvement. They also often forget to wear their safety belt, thereby increasing their risk of being fatally injured in a crash.	
10.A.13	Alcohol, how it affects your driving, vision	10.A.13(1)	Even very small amounts of alcohol adversely affect: (a) your ability to accommodate changing levels of light, (b) your depth perception, (c) your ability to make rapid lateral eye movements needed to scan for hazards, and (d) your field of vision.	
		10.A.13(2)	Alcohol use, even at very low ingestion levels, diminishes the ability to distinguish objects particularly if they are dimly lit. Considering the increased use of alcohol during the hours of darkness, the degrading of vision may be a factor in the disproportionately great contribution of alcohol to nighttime crashes.	
		10.A.13(3)	Even at moderate levels of alcohol ingestion, vision becomes blurred and you may see double as eye muscles lose their precision causing them to be unable to focus on the same object.	
		10.A.13(4)	Moderate levels of alcohol also cause a reduction in contrast sensitivity.	

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10.A.14	Alcohol, how it affects your driving, reaction time	10.A.14(1) Alcohol impaired drivers' reaction time is much slower than that of a non-impaired driver. The nerves are affected by alcohol and an impaired driver cannot react quickly to unfolding situations and make appropriate decisions.	
		10.A.14(2) Alcohol significantly slows the decision making process.	
10.A.15	Alcohol, myths about	10.A.15(1) Myths about alcohol include the belief that cold showers, black coffee, or exercising will sober up a person when, in reality, the time to sober up is dependent on what and how much you've had to drink, your body weight, what you have had to eat, and other factors outside your immediate control. There is no way to speed up the sobering process.	
		10.A.15(2) It is a myth that beer is less intoxicating or hazardous than other alcoholic beverage types. In fact, in the U. S., beer accounts for the majority of alcohol consumed by the heaviest drinkers and accounts for a disproportionate share of hazardous drinking. Recent research shows that hazardous beer consumption is currently more predictive of alcohol-related problems than hazardous consumption of wine or spirits.	NIAAA
		10.A.15(3) One study found that, after controlling for demographics, heavy beer consumption more than heavy wine or liquor/spirits intake was strongly predictive of poor risk perception. The authors concluded that individuals' underestimation of beer's intoxicating effects, compared to other alcoholic beverage types, helps explain beer's over-representation in drunk driving arrests.	<i>Greenfield and Rogers 1999</i>
		10.A.15(4) Recent research clearly establishes that there is a drinking problem on college campuses, with binge drinking accounting for a disproportionate share of the problem. But the research also shows that the actual prevalence of the problem may not be as great as the perception that the prevalence is increasing.	Harvard School of Public Health

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10.A.15(5)		<p>A University of North Carolina, Chapel Hill, study measured the actual BAC levels of students following their return to their dwellings (on or off campus). It found:</p> <ul style="list-style-type: none"> ➤ Students (and others) greatly overestimate the amount of drinking on college campuses; ➤ These overestimates lead to the erroneous conclusion that frequent and excessive drinking is the norm on campuses; ➤ The erroneous belief that “everyone” drinks creates a strong pressure on students to drink; and ➤ Correcting these misperceptions, by communicating the facts about actual drinking norms, should reduce student drinking. 	<p>Univ North Carolina – Chapel Hill study, 2004 in, NHTSA <i>Alcohol and Highway safety 2001: A review of the state of knowledge</i></p>	
10.A.15(6)		<p>Three well-designed recent studies have found that a high BAC at arrest is not in itself indicative of a drinking problem, sending a cautionary note to those concluding without other evidence that heavy drinkers are also problem drinkers.</p>		
10.A.15(7)		<p>Crash data show that only a few percent of fatal crashes involve drivers who have had recent convictions of DUI. In California, only 8% of drivers in fatal crashes had prior DUI offenses on their driving record. In California, persons with no prior DUI convictions have the highest rate of involvement in alcohol-related crashes.</p>		
10.A.16	Alcohol, crash statistics	10.A.16(1)	<p>(a) Alcohol is involved in about 35% of all fatal highway crashes in California, (b) drivers with a BAC of only 0.02 to 0.05 percent are at least seven times more likely to be killed in a crash than sober drivers, and (c) drivers with a BAC of at least 0.20% are 90 times more likely to be killed in an accident than sober drivers.</p>	<p>CHP Annual Report of Fatal and Injury Motor Vehicle Collisions.</p>

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10.A.16(2)		<p>Scientific investigation of actual crashes and the circumstances under which they occur, and laboratory and field experiments, show that the higher a driver's BAC:</p> <ul style="list-style-type: none"> ➤ The more likely it is the driver will crash; ➤ The greater the likelihood is that the driver will have initiated the crash if one occurs; and ➤ The greater the likelihood is that any resulting crash will be severe. 	
10.A.16(3)		It has long been well established that BAC levels of .05% produce increased crash risk that gets progressively and disproportionately higher at higher concentrations.	
10.A.16(4)		Crash data have been used to establish the odds of being in a crash at a given BAC relative to the odds of not being in a crash at the same BAC level. Those data show that drivers having BACs in the .080% - .099% range are 6 to 12 times more likelihood of being in a crash than drivers with lower BACs. The odds of being in a crash increase significantly again at BACs of .15% and higher with drivers being 20 times more likely to be in a crash.	<i>NHTSA, Alcohol and Highway safety 2001: A review of the state of knowledge</i>
10.A.16(5)		While male drivers constitute a much larger portion of the alcohol-crash problem than females because drinking drivers are predominantly male, female drivers comprise a significant percentage of drivers in alcohol-related crashes and in recent years are becoming increasingly more alcohol-crash involved.	NIAAA
10.A.16(6)		Alcohol-crash rates among young drivers aged 19 to 25 have increased more than have the rates of other age groups in recent years.	<i>Tashima & Helander, 2004 DUI MIS</i>

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10.A.16(7)		While very young drivers and very old drivers drink and drive less frequently than other drivers, very young drivers have a much greater alcohol-crash risk than all other age groups when they do drink and drive. This has been related to young drivers' lack of driving experience.	<i>CHP SWITRS</i>
10.A.16(8)		In terms of sheer number of crashes of all types, both serious and non-serious, persons with no priors at all appear to show the highest involvement in total crashes and in alcohol-related crashes of all degrees of severity. However, crash risk increases with the number of prior drunk driving (DUI) convictions and moving violations that a driver has. For example, drivers with one DUI conviction and four moving violations had about twice as many crashes as drivers with one DUI and no moving violations.	<i>National Highway Traffic Safety Administration (NHTSA)</i>
10.A.16(9)		Persons with no priors have the highest proportion of alcohol-related crashes. This means that most of the alcohol-involved crashes in California involve drivers who have never been arrested for DUI in the past.	
10.A.16(10)		Alcohol-related crashes declined significantly during the 1980's and 1990's in California. The fatality rate, especially important because it accounts for population growth, has declined nearly 50% since 1982. However, in the recent years there have been substantial increases in alcohol-related crashes.	<i>NHTSA, Alcohol and Highway safety 2001: A review of the state of knowledge</i>
10.A.17	Alcohol, crash statistics, motorcycle operators	10.A.17(1)	Alcohol use and excessive speed by the motorcyclist are the most common causes of fatal or injury motorcycle crashes.

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10.A.17(2)	10.A.18 Alcohol, young-driver crash statistics	Among motorcycle-involved crashes nationwide, alcohol involvement has shown a steady decline from 46% in 1993 to 39% in 2002. Alcohol involvement in single-vehicle motorcycle crashes was almost twice as high as multiple-vehicle crashes involving a motorcycle (52% vs. 28%).	<i>National Center for Statistics & Analysis presentation at TRB 2004.</i>
10.A.17(3)		NHTSA's National Center for Statistics and Analysis reported in 2004 that motorcycle operators not wearing a helmet, improperly licensed, or driving at night, especially between midnight and 3 a.m., were each far more at risk of being in an alcohol involved crash than were other motorcycle operators.	<i>National Center for Statistics & Analysis presentation at TRB 2004.</i>
10.A.18(1)		Nationwide crash data show that there have been large decreases in alcohol-related crashes among young drivers since the early 1980s. However, in California the proportion of statewide total alcohol-related crashes involving young drivers has been rising since 1999.	<i>DUI MIS</i>
10.A.18(2)		Since 1999, in California, the proportion of statewide total alcohol-related crashes involving drivers under age 31 has risen each year.	
10.A.18(3)		Nationwide, young people are over-represented in alcohol-related crashes. Recent data show that people aged 16 to 24 were involved in 28% of all alcohol-related driving crashes, although they make up only 14% of the U.S. population. Even at low BAC levels, young drivers are involved in crashes at higher rates than older drivers with similar BACs. This over-representation in crashes may be because, in part, they tend to: <ul style="list-style-type: none"> ➤ Be relatively inexperienced drivers; ➤ Be relatively inexperienced consumers of alcohol; ➤ Be more likely to use illegal drugs; and ➤ Have a false sense of invincibility and immortality. 	

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		<p>10.A.18(4) Young males are particularly at an elevated risk of alcohol crash involvement. Roughly 85% to 88% of the alcohol-related crashes among drivers under age 31 involve male drivers, with slightly lower rates (84% to 85%) involving male drivers for all ages combined.</p>	
		<p>10.A.18(5) A 2002 survey of young drivers aged 19 to 25 conducted by the California Office of Traffic Safety found that 34% of the respondents reported ever driving after drinking and 17% reported driving after they believed it was unsafe for them to drive. Survey respondents who had too much to drink and thought they couldn't drive home safely typically drove themselves home anyway.</p>	<p><i>Oct. 2002 OTS Alcohol Forum</i></p>
		<p>10.A.18(6) The survey results showed that respondents across all age, gender, and ethnic/racial groups reported that the factor that would keep them from driving after drinking would be the presence of a sober friend or relative that could drive for them.</p>	
10.A.19	<p>Alcohol, driving under the influence (DUI)</p>	<p>10.A.19(1) DUI stands for "driving under the influence" and includes being under the influence of prescription, non-prescription, or illegal drugs and/or other substances, as well as alcohol.</p>	<p>CDH: p. 63</p>
		<p>10.A.19(2) If you are 21 years of age or older, you are legally considered to be under the influence when your BAC is 0.08% or greater. You can also be convicted of DUI at any BAC level if you exhibit symptoms of being under the influence of alcohol, drugs or both.</p>	<p>CDH: p. 64 CVC: 23140</p>
		<p>10.A.19(3) It is illegal at any age and under any circumstances to operate a vehicle with a BAC of 0.08% or greater, and 0.04% or greater when operating a commercial vehicle.</p>	<p>CDH: p. 65</p>

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		10.A.19(4) Research shows that your driving ability may become impaired even with a BAC level as low as 0.05%.	
		10.A.19(5) If you are under age 21, it is unlawful for you to drive with any measurable BAC. The court may convict you of DUI with a BAC of 0.05% or higher, in addition to the penalties imposed under the non-criminal “zero tolerance” law that makes it illegal for a person under 21 to drive with a BAC of 0.01% or higher.	CDH: p. 64 CVC: 23140 Attachment 10.1
10.A.20	Alcohol, implied consent	10.A.20(1) Any person who drives a motor vehicle in California is considered to have given his or her consent to being tested for alcohol or drugs any time he or she is arrested on suspicion of DUI.	CDH: p. 66 CVC: 23612
		10.A.20(2) Your driver license may be suspended or revoked if you refuse to take a test of your BAC after being requested to do so by a peace officer. Also, you can still be convicted of DUI even if you refuse to take the test.	
		10.A.20(3) You do not have the right to be represented by an attorney while you are deciding to take or taking the BAC test.	
10.A.21	Alcohol, in the vehicle	10.A.21(1) In California, you must not: (a) drink any alcoholic beverage while you are behind the wheel or (b) have an opened alcoholic beverage container inside the vehicle which is accessible to you or your passengers (if you or one of your passengers is 21 years of age or older, an opened alcoholic beverage container may be carried in the trunk of your vehicle).	CDH: p. 64 CVC: 23220, 23221, 23222, 23223, 23225, 23226

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		<p>10.A.21(2) If there is no person in the vehicle who is at least 21 years of age, you are not allowed to have any alcoholic beverage container, opened or not, anywhere in the vehicle, including locked in the trunk, unless you are transporting it in the course of your employment.</p>	<p>CVC: 23224, 23229</p>
10.A.22	<p>Alcohol, Administrative Per Se, persons 21 or older</p>	<p>10.A.22(1) The term “Administrative Per Se” (Admin Per Se) refers to the law which requires the DMV to suspend or revoke the driving privilege of persons 21 years of age or older who are driving with a BAC of 0.08% or greater, and persons under the age of 21 who are driving with a BAC of 0.01% or greater, or drivers of any age who refuse a BAC test.</p>	<p>CDH: p. 66 CVC: 13353.2, 23136</p>
		<p>10.A.22(2) At the time that an officer places a driver under arrest for DUI, he or she also confiscates the driver’s license “on-the-spot,” issuing a 30-day temporary license to allow sufficient time for the driver to challenge the suspension through DMV review.</p>	
		<p>10.A.22(3) If you refuse to take a test for your BAC, Admin Per Se allows the officer to confiscate your driver license and serve you with an order suspending or revoking your license for the refusal.</p>	
		<p>10.A.22(4) The administrative per se immediate license suspension is an action taken against your driving privilege by the DMV, not the court. It is a non-criminal procedure that is separate from any criminal charges that may also be brought against the DUI driver in court. In many cases, the Admin Per Se action can still take effect even without a DUI conviction.</p>	<p>CVC: 13353.2, 13353.6, 13353.7, 13353, 23157, 23158.5,</p>
		<p>10.A.22(5) The notice of immediate suspension or revocation is served by the officer at the time of the arrest.</p>	<p>CVC: 13353.2, 13388, 13382</p>
		<p>10.A.22(6) The Admin Per Se suspension for a first offense is 4 months in length.</p>	<p>CVC: 13353.3</p>

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		<p>10.A.22(7) If you have one or more prior DUI convictions and/or Admin Per Se actions taken against your driving privilege, or if you refuse or fail to complete a BAC test, you may be suspended for 1 year. If you have had more than one prior DUI and/or more than one prior Admin Per Se offense and you refuse to take a BAC test at the time of another arrest, your license may be revoked for up to 3 years</p>	CVC: 13353.3, 23612
10.A.23	Alcohol, Administrative Per Se, persons under 21	<p>10.A.23(1) If you are under age 21 there is a “zero tolerance” policy for drinking and driving. If any measurable level of alcohol (0.01% BAC or greater) is detected in your system, you will lose your license for 1 year if it is your first offense. Your license will be revoked for 2 to 3 years if it is your second or subsequent offense.</p> <p>10.A.23(2) If you are convicted of DUI and do not have a driver license yet, the court will tell DMV to make you wait a year longer before you can apply for a license.</p> <p>10.A.23(3) If you are under the age of 21 and refuse to take a breath or blood test for alcohol or drugs when arrested for suspicion of DUI, your license will be suspended for one year. If your BAC is 0.05% or greater, or you were demonstrating alcohol or drug impairment at any BAC level, you may also be convicted of DUI.</p>	<p>CDH: p. 66 CVC: 23136</p> <p>CDH: p. 71</p> <p>CDH: p. 66 CVC: 23136</p>
10.A.24	Alcohol, DUI penalties, persons at any age	<p>10.A.24(1) DUI penalties include (a) mandatory jail time, (b) substantial fines and fees, (c) suspension or revocation of your driver license, (d) restrictions on when and for what purposes you may drive, (e) being assigned to an alcohol treatment program, (f) installation of an ignition interlock device on your car, and, in some cases, (g) the impoundment of your car.</p>	<p>CDH: p. 67 CVC: 13353, 13353.1</p>

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Section	Issue	Learning Objective	References
		<p>10.A.24(2) A first offender may be jailed from 96 hours to 6 months, can be fined up to \$1,000 dollars plus a 20% (\$200) surcharge, be restricted to driving to and from work or to and from an alcohol treatment program, be ordered by the court to attend weekly alcohol treatment program sessions for either three months or six months, be required to file proof of insurance with the Department of Motor Vehicles, and be required to have an ignition interlock device (IID) installed on his or her vehicle.</p>	<p>CDH: p. 66 CVC: 13352</p>
		<p>10.A.24(3) A first DUI conviction could result in fines, penalties and other costs that can easily exceed \$5,000.</p>	<p>CDH: p. 68</p>
10.A.25	<p>Alcohol, DUI penalties, persons under 21</p>	<p>10.B.25(1) In addition to the penalties listed above, the court will also order a one-year suspension of your driving privilege if you are under 21 years of age but 13 years of age or older and are convicted of possessing, purchasing, attempting to purchase alcohol, or possession of a controlled substance, under the influence or impaired by alcohol or any other drug in public, or vehicular manslaughter while intoxicated in either an automobile or a vessel.</p>	
		<p>10.B.25(2) DUI convicted drivers under age 21 are also required to attend and complete a DUI education program.</p>	<p>CDH: p. 67</p>
10.A.26	<p>Alcohol, Ignition interlock penalty</p>	<p>10.A.26(1) When an ignition interlock device (IID) is installed on a vehicle, a driver must blow into the IID to have his or her BAC checked each time the vehicle is started. Also, the offender must pay installation and maintenance costs for the IID.</p>	<p>CDH: p. 67</p>

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Section	Issue	Learning Objective	References
10.B Drugs and their effect on driving	10.B.01 Drugs, introduction	10.B.01(1) California’s DUI laws not only relate to the use of alcohol, they also apply to being under the influence of drugs. Specifically, the DUI law refers to “driving under the influence of alcohol and or drugs.”	CDH: p. 63
		10.B.01(2) The law does not have to say which drugs are involved. Many prescription medicines can also affect and impair the way that a person drives.	CDH: p. 64
		10.B.01(3) The use of any drug while driving (the law does not distinguish between prescription, over-the-counter, and illegal drugs) that impairs your driving is illegal.	CDH: p. 64
		10.B.01(4) Almost any drug can affect a person’s driving skill. This is true of prescription drugs, drugs you can buy over-the-counter, and illegal drugs. Alcohol can enhance some of the dangerous side effects of many drugs, even prescription or over-the-counter drugs.	CDH: p. 64
		10.B.01(5) There are many factors that influence the risk of effects on driving for any drug, including: The dose, the dosage frequency, acute and residual effects, chronic administration, route of administration, the concentration of the drug at the site of action, idiosyncrasies of metabolism, drug tolerance or hypersensitivity, and the combined effects of the drug with other drugs and/or alcohol.	NHTSA
		10.B.01(6) If a law enforcement officer suspects that you are under the influence of drugs, the officer can require that you take a blood or urine test. Persons refusing these tests will be subject to the same license suspensions and revocations as for alcohol test refusal. Refusing to submit to a test for drug content will result in a suspension or revocation even if the driver had already readily submitted to and completed a breath test for alcohol content.	CDH: p. 66

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Section	Issue	Learning Objective	References
		10.B.01(7) Anyone convicted of possessing, selling, or manufacturing illegal drugs will be subject to a 6-month suspension of their driving privilege.	CDH: p. 64
		10.B.01(8) Drugged drivers tend to be young drivers, unemployed or students.	
10.B.02	Drugs, legal, introduction	10.B.02(1) You can be found to be driving “under the influence” when it is shown that your driving was adversely affected by prescription and/or over-the-counter drugs.	CDH: p. 64 CVC: 23152
		10.B.02(2) Do not mix alcohol with your medications. This applies to both prescribed and over-the-counter medications. Many drugs have unexpected side effects when taken with alcohol.	CDH: p. 64
		10.B.02(3) Remember— even though you may feel fine, you may not be totally free of the adverse effects that can affect your driving. It is ultimately YOUR responsibility to know the effects of the medication you take.	CDH: p. 64, 76
		10.B.02(4) If you must take a medication before driving, find out the effects of the medication from your physician or pharmacist.	CDH: p. 64, 76
		10.B.02(5) Read the labels on common medications you take and follow the warnings. Any drug that “may cause drowsiness or dizziness” is one that you should not take before driving.	CDH: p. 64
		10.B.02(6) All medications, prescription and over-the-counter, are potentially dangerous.	CDH: p. 76
10.B.03	Drugs, legal, over-the-counter	10.B.03(1) The fact that a drug is nonprescription does not make its effects any less dangerous or illegal.	CDH: p. 64

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Section	Issue	Learning Objective	References
		10.B.03(2) Other over-the-counter medications that can impair driving ability include: (a) pain killers, (b) sleeping aids, (c) diet pills, (d) tranquilizers, (e) allergy medications, and (f) cough suppressants.	CDH: p. 64
		10.B.03(3) Using nonprescription over-the-counter drugs while driving, such as those used to treat allergies and drowsiness and many cough syrups (which often contain alcohol), can result in your being arrested for DUI.	CDH: p. 64
		10.B.03(4) Energy pills, “uppers,” and diet pills can make a driver more alert for a short time. Later, however, they can cause a person to become nervous, dizzy, and not able to concentrate. They can also negatively affect vision.	CDH: p. 64
		10.B.03(5) Over-the-counter medicines that you take for colds and allergies can make you drowsy and affect your driving ability. Carefully read and follow the directions about dosage and side effects. Pay close attention to warnings about continued dosage and who should and should not take the medication.	CDH: p. 64, 76
10.B.04	Drugs, legal, prescription	10.B.04(1) The fact that a doctor prescribed the drug does not make its effects any less dangerous or illegal when driving.	CDH: p. 64
		10.B.04(2) Prescribed narcotics such as Codeine, Morphine, Methadone, Demerol, and other pain-killers can cause drowsiness, a stupor like condition, a false sense of well being, and poor coordination. All of these effects can seriously impair driving ability.	<i>NHTSA Drugs and Human Performance fact sheets</i>

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Section	Issue	Learning Objective	References
		10.B.04(3) Prescribed muscle relaxants, anti-depressants, anti-anxiety medications can cause drowsiness, dizziness, sedation, slowed thinking, disorientation, lack of comprehension, psychomotor and cognitive impairment, all of which can impair driving ability.	<i>NHTSA Drugs and Human Performance fact sheets</i>
		10.B.04(4) Under no circumstances should you mix medications unless directed by your physician.	CDH: p. 76
		10.B.04(5) You should never take medications prescribed for someone else.	CDH: p. 76
10.B.05	Drugs, illegal, introduction	10.B.05(1) You can be found to be driving while impaired and convicted of DUI with any amount of illegal drugs in your system.	CVC: 23152
		10.B.05(2) Unlike alcohol, there is no legally acceptable level of use when it comes to drugs (it is important to remember that there is no safe level of alcohol use when driving because some impairment occurs at even the lowest levels).	
		10.B.05(3) All drugs that are addicting can activate the brain's pleasure circuit. Drug addiction is a biological, pathological process that alters the way in which the pleasure center, as well as other parts of the brain, function. To understand this process, it is necessary to examine the effects of drugs on neurotransmission. Almost all drugs that change the way the brain works do so by affecting chemical neurotransmission. Some drugs, like heroin and LSD, mimic the effects of a natural neurotransmitter. Others, like PCP, block receptors and thereby prevent neuronal messages from getting through. Still others, like cocaine, interfere with the molecules that are responsible for transporting neurotransmitters back into the neurons that released them. Finally, some drugs, such as methamphetamine, act by causing neurotransmitters to be released in greater amounts than normal.	

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Section	Issue	Learning Objective	References
10.B.06	Drugs, illegal, depressants	10.B.06(1) Depressants such as sleeping pills, tranquilizers and barbiturates can cause drowsiness, the inability to stay awake, slowed reactions, reduced ability to perform multiple tasks, loss of peripheral vision, and poor coordination. All of these effects are dangerous when you are driving.	<i>NHTSA Drugs and Human Performance fact sheets</i>
10.B.07	Drugs, illegal, stimulants	10.B.07(1) In addition to it being illegal to use these drugs, stimulants such as speed, methamphetamine, crack, and cocaine can cause a false sense of well being, difficulty in concentrating, aggressiveness, chronic paranoia, and impatience. These types of effects can lead to erratic, aggressive behavior and dangerous driving situations.	
		10.B.07(2) Actual crash reports involving drivers testing positive for cocaine show that the driver was often speeding, lost control of the vehicle, turned in front of other vehicles, or engaged in other high-risk, aggressive behavior leading to the crash. As effects of cocaine wear off, the user may suffer from fatigue, inattention, sleepiness, or depression that can also impair driving ability.	<i>NHTSA Drugs and Human Performance fact sheets</i>
		10.B.07(3) Illegal stimulants can cause the same problems as prescription stimulants, but with much greater intensity.	<i>NHTSA Drugs and Human Performance fact sheets</i>
		10.B.07(4) Stimulants, particularly at higher doses, can give users a false sense of well-being and make them wrongly think that they are super-alert. These drugs often cause drivers to take foolish and life-threatening risks. In studies of actual crashes involving drivers testing positive for stimulants, behaviors leading to the crash were reported as driving-off-the-road, high speed, failing to stop, diminished divided attention. When the effect of stimulants wears off, which can be very suddenly, users can become very tired quickly. This could cause drivers to lose concentration and alertness and place them in a dangerous situation.	<i>NHTSA Drugs and Human Performance fact sheets</i>

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Section	Issue	Learning Objective	References
10.B.08	Drugs, illegal, marijuana	10.B.08(1) Marijuana has a unique spectrum of behavioral effects preventing classification of the drug as stimulant, sedative, tranquilizer, or hallucinogen.	<i>NHTSA Drugs and Human Performance fact sheets</i>
		10.B.08(2) Marijuana causes drowsiness, can distort your sense of time and space, and impairs your ability to adapt to light and dark.	<i>NHTSA Drugs and Human Performance fact sheets</i>
		10.B.08(3) If you are convicted for possessing, possessing for sale, transporting or offering to transport, importing into California, selling, furnishing, administering or giving away marijuana, the court will order a revocation of your driver license. Also, providing marijuana or inducing its use by a minor, hiring or employing a minor for the purpose of transporting, carrying, selling, giving away, preparing for sale or peddling marijuana will also result in revocation.	CVC: 13202
		10.B.08(4) Marijuana impairment is more immediate after consumption than is alcohol impairment and when used in combination the duration of impairment is prolonged and the level of impairment is additive, that is, greater than either one alone.	<i>Marijuana and alcohol driving study, Biasotti et al., 1986</i>
		10.B.08(5) In a double blind, control group, closed-course driving study, law enforcement officers were able to detect driving impairment with a significant degree of accuracy within an hour after drivers ingested low doses of marijuana.	

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Section	Issue	Learning Objective	References
		10.B.08(6) Marijuana affects people’s awareness of how fast they are driving and their ability to judge time and space. It also tends to affect an individual’s concentration. That is, the impaired driver tends to concentrate on one thing at a time, ignoring all else around them. A good driver must be able to observe his surroundings and make sound decisions when driving a vehicle. This becomes difficult, if not impossible, when under the influence of marijuana.	
10.B.09	Drugs, illegal, narcotics	10.B.09(1) Narcotics such as heroin or morphine can slow your reaction time, cause visual distortions, impair motor skills, cause stupor, coma, and death.	
		10.B.09(2) Narcotics cause an inability to concentrate, apathy, euphoria, stupor, dimness of vision, drowsiness and nausea. A driver’s mind will wander and will have lapses in consciousness. Decision making processes will become distorted. It is therefore difficult for narcotic-impaired drivers to make quick decisions about developing traffic situations.	
10.B.10	Drugs, illegal, hallucinogens	10.B.10(1) Hallucinogens such as LSD (acid), mescaline, PCP (angel dust), and peyote can cause visual, auditory or tactile hallucinations that distort your ability to detect hazards and impair your judgment. These drugs can create a perception of super strength and invulnerability, and cause aggressive behavior.	
		10.B.10(2) NHTSA warns that PCP is not compatible with skills required for safe driving. Severe impairment of mental and physical abilities can occur following single doses.	<i>NHTSA Drugs and Human Performance fact sheets</i>

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Section	Issue	Learning Objective	References	
		10.B.10(3) Hallucinogens produce hallucinations that can interfere with vision, perception and hearing. That is, the user experiences images and sounds that do not truly exist. These drugs can cause drivers to lose the ability to judge space and the speed at which they are driving. Additionally, the hallucinations can produce erratic and dangerous driving on the part of the impaired driver.		
	10.B.11 Drugs, synergistic	10.B.11(1) Combining illegal, prescription, or over-the-counter drugs with other drugs or alcohol may impair your vision, judgment, and reaction time far greater than you would expect from taking the same drugs individually. This stronger, combined (synergistic) effect can seriously impair safe driving ability.		
		10.B.11(2) Combining different drugs, or drugs and alcohol can enhance some of the dangerous side effects of many drugs, even those that are prescribed by a physician or purchased over-the-counter. This can result in even more driving impairment.	CDH: p. 64	
		10.B.11(3) Many drugs have unexpected side effects when they are taken with alcohol. Drugs and alcohol should never be used at the same time.	CDH: p. 64	
10.C	Suspended or unlicensed driver vehicle impoundment laws	10.C.01 Vehicle Impoundment laws	10.C.01(1) All DUI offenders receive at least some license suspension or revocation term. If an individual is caught driving while they are suspended or revoked, the vehicle they are driving will be impounded for 30 days. This vehicle impoundment action is effective in reducing the numbers of suspended drivers who drive even though they are suspended; because it reinforces the suspension by preventing further illegal driving and imposing a large inconvenience. By taking their vehicle, suspended drivers have a harder time driving illegally. Research shows that having their vehicle impounded has proven to deter drivers from reoffending and prevents possible offenders from risking losing their car if they drive.	DeYoung 1997 and CVC 14602.6

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Section	Issue	Learning Objective	References
10.D Avoiding accidents involving drugs and alcohol	10.D.01	Avoiding accidents, not driving while intoxicated	10.D.01(1) You can avoid driving while impaired by: (a) abstinence from drinking alcohol, (b) using public transportation, (c) appointing a designated driver, (d) staying where you are until sober, (e) drinking responsibly at home, (f) encouraging friends to stay overnight if you think they may be impaired.
	10.D.02	Avoiding accidents, use designated driver	10.D.02(1) The goal of the “designated driver” approach to dealing with drinking and driving is to encourage one individual within a group to abstain from consuming alcoholic beverages during an outing so that he or she can be responsible for driving the other members of the group safely. Many licensed eating and drinking establishments participate in the <i>designated driver program</i> by providing complimentary nonalcoholic beverages to the designated driver.
			10.D.02(2) To serve as a designated driver you: (a) must possess a valid driver license, (b) should be at least 21 years of age (so that you can accompany your friends), (c) must be part of a group of two or more persons, (d) must verbally identify yourself to the server, (e) must abstain from consuming alcoholic beverages for the duration of the outing, and (f) must not be an otherwise impaired driver.
	10.D.03	Avoiding accidents, dealing with intoxicated drivers on the roadway	10.D.03(1) The highest incidence of DUI begins in the late afternoon, continues through the early hours of the morning and is greater on weekends. DUI peak times are from 10:00 p.m. to 3:00 a.m. This is due to the fact that many persons begin drinking after work and on outings during the weekend, especially in the evening.

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Section	Issue	Learning Objective	References
	10.D.03(2)	Nationwide, 76% of fatal crashes occurring between midnight and 3am are alcohol-involved. A high percentage of fatal crashes occurring during the 3-hour periods immediately before and after the midnight to 3 am period also have high percentages of alcohol involvement (62% and 69%, respectively).	
	10.D.03(3)	In 2000, 58% of fatal crashes occurring in California between midnight and 3am were alcohol-involved. The 3-hour periods immediately before and after the midnight to 3 am period have higher percentages of alcohol involvement (43% and 56%, respectively) than in other hours of the day. On Saturdays, 71% of fatal crashes were alcohol involved between midnight and 3am and overall, 32% of all fatal crashes were alcohol involved.	
	10.D.03(4)	More fatal crashes involving alcohol occur on Saturdays than on any other day. However CHP annual statistics show that time of day represents a better measure for distinguishing between alcohol involvement and noninvolvement in crashes than does day of the week. This reflects the fact that very heavy drinkers comprising the majority of those in alcohol-involved crashes drink heavily throughout the week and not merely on weekends.	
	10.D.03(5)	Intoxicated drivers may drive at unreasonably fast or slow speeds, make frequent and unnecessary lane changes, pass and change lanes erratically, follow too closely, overshoot or ignore stop signs and signals including stopping at green lights, weave, fail to turn on or dim headlights, straddle lanes, and have difficulty negotiating curves.	

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Section	Issue	Learning Objective	References
	10.D.03(6)	It is important to keep a safe distance between your vehicle and that of a suspected intoxicated driver. This may require you to pull over to let them pass by. Remember that it is safer to have an impaired driver in front of you rather than behind you. If possible, you should notify law enforcement of a suspected drunk driver. Many communities have drunk driver hotlines. You should become familiar with the number in your area.	