Chapter 29

SUBSTANCE USE AND ABUSE IN THE MILITARY

R. GREGORY LANDE, DO*; BARBARA A. MARIN, PhD†; JAMES J. STAUDENMEIER, MD, MPH‡; AND DARYL HAWKINS, PhD§

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*Chief, Psychiatry Continuity Service, Department of Psychiatry, Walter Reed Army Medical Center, 6900 Georgia Avenue NW, Building 2, Room 5343, Washington, DC 20307; Clinical Consultant, Walter Reed Army Medical Center Substance Abuse Program, Washington, DC
†Integrated Chief, Department of Addictions Treatment and Clinical Director, Army Substance Abuse Program, Walter Reed Army Medical Center, 6900 Georgia Avenue NW, Washington, DC 20307-5001
‡Colonel, Medical Corps, US Army; Consultant, Army Substance Abuse Program, Department of Psychiatry, USAMEDDAC, 11050 Mount Belvedere Boulevard, BMD (Wilcox), Fort Drum, New York 13602; formerly, Fellow in Geriatric Psychiatry, Walter Reed Army Medical Center, Washington, DC
§Alcohol and Drug Control Officer, Army Substance Abuse Program, Building 6, Room 2066, Walter Reed Army Medical Center, 6900 Georgia Avenue NW, Washington, DC 20307-5001
INTRODUCTION

Through the centuries of armed conflict, soldiers have sought to immunize themselves from the fear and uncertainty of combat. The principle shield that protects these combatants is training. Endless training breeds confidence in military skills and weapons. A strong group milieu firmly centered around camaraderie, mutual support, and confidence further strengthens emotional resilience. These are the positive factors reinforcing a sense of “invulnerability.”

The emotional shield protecting soldiers from the stress of combat is further strengthened by training and group cohesion, but weakened by other hidden, pernicious factors. Chief among the factors battering the emotional shield are individually experienced traumas. Although substance use may be perceived by soldiers as a way of reducing the stress of these traumas, the corrosive influence of substance abuse is substantial.

Modern militaries are dominated by complex machinery, precision weaponry, advanced information technologies, and a structural agility necessary for rapid adaptation to a wide range of threats. In a similar fashion, today’s soldier is more sophisticated, relying more than ever on “brain over brawn.” Nonetheless, physical stamina is important, given the grinding endurance required of combat operations. As a consequence, all military personnel must maintain a level of physical fitness. Despite the obvious importance of physical training, cognitive stamina may be even more important. A successful military career requires persistent honing of the basic cognitive tasks involving information processing and psychomotor skills.

EFFECTS OF ALCOHOL ABUSE ON PERFORMANCE

Cognitive Impairment

The use of alcohol promotes a wide range of biobehavioral impairments, many of which have particular significance to military activities. Alcohol impairs cognitive function in ways both subtle and severe. The nature and intensity of alcohol-related impairments vary according to consumption patterns, physiologic response, social acceptance, and the presence of co-occurring medical or psychiatric problems. Despite these intrapersonal variations, at least for the purposes of comparison, the average man weighing 150 pounds can reliably achieve a blood alcohol concentration (BAC) of 0.04% following the consumption of two standard alcohol drinks in 1 hour.1 Thus, even low levels of alcohol consumption impair cognition. Complex tasks are even more sensitive to the intoxicating influence of alcohol.

Mental activities that require divided attention, such as managing a weapon and scanning the environment, can suffer when blood alcohol levels hover as low as 0.02%.2 The brain’s information processing system attempts to compensate by focusing mental acuity in one area. This can lead to a devastating outcome when mental agility and survival are closely linked. The average man can achieve a BAC of 0.02% with as little as one standard drink in 1 hour, or be on the downward alcohol concentration slope after a bout of heavier drinking.2

One psychomotor task with special significance in military operations involves the ability to visually track objects. Whether sighting a weapon or driving a vehicle, the smooth and accurate control of eye motion is critical to mission success. Military personnel can experience impaired visual acuity, mostly in terms of difficulty focusing, with BAC as low as 0.03%.2

Clearly, the “blurred” vision associated with alcohol use is common. A less recognized, but potentially more hazardous, consequence of consumption involves a visual–spatial impairment. Visual–spatial exercises require the proper placement of objects in space. To effectively respond to an enemy sniper firing from multiple areas requires recognition of the sniper’s relative positions and possible extrapolation to the next location. This sort of analysis relies on accurate perception and the application of abstract thinking.

Alcohol interferes with visual–spatial processing in two broad ways: intoxication makes multitasking more difficult or it simply renders the vision less accurate. The long-term use of alcohol, where duration and quantity are not fully defined, seems to produce a fixed change in cognition. The change is expressed in a loss of mental agility, inhibiting the ability to confront a novel problem with a creative solution. Clues to this condition emerge when an otherwise adequately performing individual is thrust into a new environment and cannot adapt old skills to the current reality.2

The greatest degree of impairment in the ability to apply abstract reasoning occurs in the weeks following reduction or cessation of significant alcohol consumption. Military personnel accustomed to substantial levels of alcohol use may be forced into an unwelcome abstinence when deployed, which can be accompanied by the emergence of worrisome symptoms of cognitive decline.
Memory Impairment

Chronic alcohol use disrupts the communication paths between areas of the brain responsible for processing memories, specifically the frontal lobes and the hippocampus. In fact, long-term alcohol use structurally reduces brain volume. The resulting memory deficits profoundly influence the acquisition and retention of knowledge.

A more intriguing and potentially harmful effect of alcohol use arises from acute intoxication. It seems increasingly apparent that alcohol consumption interferes with memory formation. The risk of acute alcohol-related memory impairment correlates closely with quantity consumed and the speed of absorption. Bolus, or binge, drinking among men is defined as five or more drinks in 2 hours. For women, four or more drinks in 2 hours constitutes bolus drinking. A much higher probability of memory impairment exists if bolus drinking occurs on an empty stomach.

Blackouts—the complete failure to transcribe events into memory—are not a rare phenomenon. Indeed, surveys among college students, a cohort closely age-matched with the largest military contingent, would suggest that blackouts are common. Based on these surveys, an estimated 40% to 50% of college students report a prior blackout. Fragmented memory loss is more common than a total blackout. Just a few drinks, ambiguously regarded as “social drinking,” can produce lapses in attention and word finding. Neither condition benefits military personnel engaged in fast-paced military operations.

Sleep Impairment

Alcohol’s negative impact on cognition and memory is amplified by another side effect of consumption. Even small amounts of alcohol can profoundly affect the sleep cycle. Although alcohol consumption reduces the amount of time necessary to fall asleep, it disturbs the later parts of the sleep cycle. The night is spent with frequent awakenings, many of which occur during rapid eye movement (REM) sleep. Disruption of REM sleep may have particular relevance in exacerbating fatigue, irritability, and the recall of disturbing dreams.

The sleep-inducing benefits of alcohol fade with repeated use, while at the same time the sleep cycle becomes ever more fragmented. It seems natural enough to use alcohol as a soporific during periods of stress and trauma. However, shift work and deployment across time zones may synergistically combine with an alcohol-induced sleep disorder to further impair the individual.

Alcohol withdrawal, perhaps induced by the forced abstinence of rapid mobilization, characteristically produces marked insomnia, disturbing dreams, and even hallucinations. This can be an especially troublesome development when a service member deploys to an area of combat operations. The normal anxiety associated with deployment fuses with the symptoms of withdrawal and may produce substantial incapacitation.

SCREENING FOR ALCOHOL ABUSE

The detection of alcohol abuse begins with an understanding of its prevalence. Epidemiologic studies categorize alcohol use as light, moderate, and heavy. Light drinking consists of three or fewer beverages per week. Light drinking is common. Nearly 43% of Americans meet the consumption criteria for light drinking.

Gender influences the values associated with moderate and heavy drinking. Moderate drinking among women consists of more than three but less than eight drinks per week; for men, no more than 14 drinks per week. Heavy drinking among women consists of more than one daily drink per week; for men it is more than two daily drinks per week. Based on these criteria, 14% of Americans are moderate drinkers and almost 4.5% meet the definition of heavy drinking.

Epidemiologic consumption patterns contributed to the development of a simple screening tool referred to as the “Quantity Frequency Questionnaire.” The first set of questions queries quantity by asking, “On average, how many days a week do you drink alcohol?” and “On a typical day when you do drink, how many do you have?” If the multiplied sum of the two responses exceeds 14 for men (or seven for women) this can be considered “at-risk” drinking.

Bolus drinking is another “at-risk” drinking behavior. This pattern of drinking is the other half of the Quantity Frequency Questionnaire. The individual is asked, “What is the maximum number of drinks you had on any given day in the past month?” “At risk” bolus drinking occurs when men exceed four (and women three) drinks at one time. If the person is deemed “at-risk” based on the Quantity Frequency Questionnaire, then the CAGE questions should be asked. The CAGE questionnaire inquires about alcohol use over the past year by asking:

C: Have you ever felt that you should CUT down on your drinking?
A: Have people ANNOYED you by criticizing your drinking?
G: Have you ever felt bad or GUILTY about your drinking?
E: Have you ever tried a drink first thing in the morning? (EYE opener)

If the person answers yes to any of the CAGE questions, this should trigger a more comprehensive assessment of substance use.

Alcohol screening questionnaires can be combined with certain laboratory tests. (Most biochemical markers require a blood sample.) The accuracy of these tests in detecting alcohol use depends on the tests’ sensitivity and specificity. By itself, no single test conclusively identifies alcohol use. Multiple tests, combined with an “at risk” history, provide better evidence of problem drinking. Perhaps the best single biochemical marker of alcohol use is gamma glutamyl transferase, or GGT. Elevated GGT occurs in a range of 30% to 50% among problem drinkers.

Problem drinking may also elevate aspartate aminotransferase and mean corpuscular volume, but both are less sensitive than GGT. Carbohydrate deficient transferrin is elevated among heavy drinkers and has sensitivity levels approaching GGT. Ethyl glucuronide can be detected in a urine specimen up to 5 days after heavy alcohol use. Ethyl glucuronide might play a clinically useful role in detecting alcohol use after bolus drinking on weekends.

TOBACCO USE

Although alcohol remains the most commonly used substance, tobacco use is almost as frequent. Approximately 29% of Americans use tobacco, with nearly 24% of that figure accounted for by cigarettes. Another 3% of the population uses smokeless tobacco. Thus, healthcare practitioners should inquire about all forms of tobacco, including smokeless products.

During periods of major upheaval, such as natural or manmade disasters, an increase in the use of tobacco occurs. Several studies explored tobacco use among individuals exposed to the Oklahoma City bombing in 1995, in the aftermath of the 2001 terrorist attack on the twin towers of the World Trade Center in New York, and during other stressful events. The findings from these collective studies provide evidence of increased smoking among traumatized individuals. Individuals who increase their smoking during periods of stress subsequently develop the symptoms of posttraumatic stress disorder (PTSD) at rates exceeding nonsmokers. The problem is further compounded when traumatized individuals report an inability to quit smoking. In a more quantifiable way, smoking appears to double the risk of developing PTSD.

Tobacco use appears to play a key role in amplifying anxiety, inhibiting more effective coping strategies, and possibly contributing to heightened irritability. Military planners and healthcare practitioners can monitor tobacco use as a potential risk factor for emotional distress. For example, the predeployment phase begins with official notification of a pending assignment. Some military personnel may respond by initiating or markedly increasing their use of tobacco.

The Fagerström Test for Nicotine Dependence is a screening tool used to assess cigarette use and can be administered at any phase of the deployment cycle, be it pre-, during, or postdeployment, to assess the degree of nicotine use. The test has a total of six questions, covering the following areas for an individual smoker:

1. time of day first cigarette is smoked;
2. whether the subject has difficulty refraining from smoking in places where it is not allowed;
3. time of day it would be most difficult to go without a cigarette;
4. total number of cigarettes smoked each day;
5. time of day, if any, when the subject smokes more frequently; and
6. whether or not the subject smokes even when ill enough to be home in bed.

Points are assigned to the responses, ranging from 0 to 3 points, depending on the particular question. The test has a maximum total of 16 points; any score above 7 points is considered a very high addiction. Military personnel scoring at the higher levels may be at increased risk of emotional deterioration. The increased use of tobacco may be an effort to self-medicate. Healthcare practitioners should take the opportunity to explore this possibility.

OTHER DRUGS OF ABUSE

A sizable minority of the American public regularly skirts potentially severe legal penalties to use, abuse, or sell a wide range of illegal drugs. A person’s drug of choice is a complex judgment based on personality
clinician suspects the nonmedical use of oxycodone, tests and must be specifically ordered by name. If a are not included in most standard medical urine drug codone, and fentanyl are examples of opioids. Opioids are semisynthetic or fully synthetic opiates and are included in most standard urine drug naturally occurring compounds are referred to as the poppy plant include morphine and codeine. These likely offenders. Medications derived naturally from designed to detect opiate use will not identify the most that correlates well with the majority of the military population. Among this group, the survey reported 16.4% used marijuana, 6% used prescription drugs for recreational purposes, 1.7% used cocaine, and 1.5% used a hallucinogen. Marijuana is the most commonly used illegal drug, with 5.8% of Americans 12 years and older reporting use in the month proceeding the administration of the National Survey on Drug Use. During the same time period, 2.1% reported the nonmedical use of prescription pain relievers, 0.8% of Americans reported the use of cocaine, and 0.4% used a hallucinogen. “Ecstasy” accounts for half of the reported hallucinogen use.

The nonmedical use of prescription pain-relieving drugs is an area of special concern. The most likely source of these prescription drugs was a friend or family member. The extent to which military use of illegal drugs bears some similarity to the National Survey on Drug Use is not precisely known. It seems reasonable to conclude that social trends are reflected in the military population. Following this line of reasoning, marijuana, cocaine, and the nonmedical use of prescription drugs would be the most likely problem areas.

The abuse of prescription pain relieving medications is particularly vexing. Traditional medical tests designed to detect opiate use will not identify the most likely offenders. Medications derived naturally from the poppy plant include morphine and codeine. These naturally occurring compounds are referred to as opiates and are included in most standard urine drug screens. Opioids are semisynthetic or fully synthetic opiates. Heroin, hydromorphone, hydrocodone, oxycodone, and fentanyl are examples of opioids. Opioids are not included in most standard medical urine drug tests and must be specifically ordered by name. If a clinician suspects the nonmedical use of oxycodone, for example, then oxycodone must be ordered by name from the testing laboratory. Clinicians should consult their laboratories for guidance.

Military planners and healthcare professionals should recognize the difficulty identifying opioid abuse and the ease in obtaining these medications. Detection of the nonmedical use of prescription opioid abuse begins with an increasing index of suspicion triggered by certain behaviors. Routine screening should be part of every health encounter, which should include several questions aimed at understanding the person’s use of addicting medications. Greater concern is occasioned by frequent medical visits rewarded with overlapping prescriptions. Some of the excess medications may be destined for diversion. The truly resourceful individual will seek prescription medications from multiple healthcare providers, both military and civilian, as well as the Internet.

The US government, through the Controlled Substances Act, classifies drugs into five schedules based on abuse potential. Drugs in schedule I or II are considered “illegal drugs” for purposes of prosecution. The Controlled Substances Act applies based on abuse potential. Drugs in schedule I or II are considered “illegal drugs” for purposes of prosecution. The Controlled Substances Act applies in all settings, be it a tertiary care medical facility in the United States, a regional military hospital in a foreign country, or mobile medical assets in support of combat operations.

The US military fields a robust drug-testing program. Today’s modern drug-testing programs are direct descendants of embryonic military efforts initiated in the 1970s. Roughly a decade later, President Ronald Reagan signed Executive Order 12564, mandating federal drug testing. Federal regulators understood the importance of clinical oversight and by the mid-1980s created the position of a medical review officer (MRO). The MRO plays a critical role in the fair and effective administration of the Federal Drug Testing Program. The US Department of Transportation and the Substance Abuse and Mental Health Services Administration both have extensive print and online documentation outlining the exact responsibilities of the MRO. US Army policies and procedures are found in Medical Command Regulation 40-51.

THE ROLE OF THE MILITARY MEDICAL REVIEW OFFICER

For the sake of brevity, and in light of the changing rules and variances among the services, this chapter will not cover all the responsibilities and regulations pertaining to the military MRO. The official definition of the MRO is “a licensed physician responsible for receiving laboratory results generated by an agency’s drug testing program who has knowledge of substance abuse disorders and has appropriate medical training to interpret and evaluate an individual’s positive test result together with his or her medical history and any other relevant biomedical information.”

The military treatment commander appoints the MRO (always a physician) specifically to function in that capacity. The MRO must be familiar with laboratory procedures, which include screening immunoassay, gas chromatography, and mass spectrometry. The
Figure 29-1. Standard Form 513, Medical Record Consultation Sheet.
Substance Use and Abuse in the Military

The military service's testing procedures are consistent among the services. For purposes of illustration, the Army’s procedures are set forth in Army Regulation (AR) 600-85, Chapter 8, which places the responsibility of test result reporting in the hands of the alcohol and drug control officer (ADCO). The ADCO is a member of the garrison or administrative section of Army Substance Abuse Program (ASAP). The installation biochemical testing coordinator (IBTC) works for the ADCO and coordinates the testing and review of the urinalysis. The IBTC and ADCO do not have a direct affiliation with the military treatment facility. The IBTC or ADCO sends the MRO a consult or request (using an SF-513, shown in Figure 29-1) requesting a review of the positive urinalysis. The SF-513 request should include the military person’s identifying data, specific drugs in question, and the date the biochemical test was conducted. The MRO should also review DD Form 2624 (Figure 29-2), otherwise known as the Specimen Custody Document: Drug Testing.

**Figure 29-2.** DD Form 2624, Specimen Custody Document: Drug Testing, page 1. **(Figure 29-2 continues)**
the drug test. If satisfied that the evidence confirms legitimate drug use, the MRO will annotate “legitimate drug use” on the SF-513 and return the form to the ADCO.

THE ARMY SUBSTANCE ABUSE PROGRAM

Biochemical testing is only one of several methods through which referrals are made to the ASAP, or its counterparts in the other military services. Referrals can also be initiated by commanders and supervisors in response to observed changes in occupational performance, interpersonal relations, and physical fitness or health problems suspected to be secondary to substance use. These referrals are made by physicians and other healthcare providers in the context of routine or emergency medical treatment, as a consequence of military or civilian law enforcement investigation or apprehension identifications, or through the individual’s voluntary self-identification to the clinic.

In fiscal year 2008, the Army’s Drug and Alcohol Management Information System reported that 10,407 soldiers were enrolled in the ASAP Army-wide. An additional 10,310 soldiers were evaluated, though not enrolled. Of those evaluated and subsequently enrolled for outpatient treatment, 22% were referred through biochemical identification, 27% through commander or supervisory intervention, 11% as a result of a driving under the influence/driving while intoxicated arrest, 5% through other investigation or apprehension identification, 10% as medical referrals, 24% as a result of self-identification, and the remainder through a variety of other channels (ie, security clearances, family members).21

Regardless of the method of identification, all of the military substance abuse treatment programs function in large measure within the conceptual model of an employee assistance program, focusing on personnel conservation and military readiness. Optimizing the
advantages of coercive treatment through effective leveraging of command oversight, the ASAP benefits from a well-articulated team approach in the service of behavior change. The relationship between the ASAP and the command is clearly defined in AR 600-85, with parallel guidance in Air Force Instruction 44-121 and Operational Navy Instruction 5350.4C. AR 600-85 differentiates the responsibilities of the command from that of the clinical staff, placing clinical decision making in the hands of the ASAP’s professional staff. All of the clinical staff is required, per AR 40-68, to be licensed to practice independently and to be certified in substance abuse rehabilitation. The clinical consultant, an addictions-trained physician, assists the ASAP staff, providing medical consultation and adjunctive medication management. It is the ASAP clinical staff’s responsibility to advise command of all referrals and to secure command input into their assessments.

Although only the clinical staff may define treatment recommendations, unit commanders retain authority for all administrative decisions, ranging from deployments to retention or separation from service, extensions on active duty to permit reenlistment, or bars to reenlistment. When retention decisions are required, commanders must assess the service members’ rehabilitation efforts in the context of their occupational specialties, prior service records, the needs of the military, and their potential for future military service. In general, each of the military services will tend to separate drug- or alcohol-dependent service members who do not respond to treatment.

The Secretary of Defense is required to identify and treat all active duty service members who are drug and alcohol dependent. Regardless of service designation, referral for evaluation is mandatory and early intervention is key. All of the military services have procedures and policies to identify and offer treatment to those active duty members who have drug and alcohol problems. The unique challenges to deployed commanders in managing substance abuse issues are addressed in an information paper produced by the Army Center for Substance Abuse Programs. It provides guidance to deployed unit commanders regarding accessing ASAP services prior to deployment, in theater, and upon return.

Once identified and referred, a comprehensive biopsychosocial and substance use assessment is completed by the ASAP staff. The assessment explores the extent of substance use; intervention is recommended according to the degree of impairment. Such treatment recommendations are based upon careful consideration of the criteria for substance use disorders, per the current Diagnostic and Statistical Manual of Mental Disorders. Diagnoses of abuse and dependence generally require enrollment in treatment for periods of 3 months to 1 year. The intensity of response can range from a 12-hour instructional program called ADAPT (Alcohol and other Drug Abuse Prevention Training) to outpatient treatment activities in the ASAP. Referrals to higher levels of care for detoxification, intensive outpatient programs, partial hospitalization programs, or residential treatment are often incorporated into the treatment plan.

Per Health Affairs Policy 9700029, a continuum of substance abuse care must be considered for active duty service members, consistent with the patient placement criteria of the American Society of Addiction Medicine. “These criteria reflect the philosophy of placing patients in the least intensive/ restrictive treatment environment, appropriate to their therapeutic needs.” In addition to defining a crosswalk for level-of-care determinations, the American Society of Addiction Medicine posits a multidimensional analysis to enhance treatment decision making. Acute intoxication or withdrawal potential (Dimension 1) and the patient’s biomedical conditions and complications (Dimension 2) must receive primary consideration in the stabilization process, after which the patient’s emotional, behavioral, and cognitive conditions and complications (Dimension 3); readiness for change (Dimension 4); relapse, continued use, or continued problem potential (Dimension 5); and recovery/living environment (Dimension 6) are considered in the formulation of a dynamic and individualized treatment plan. Treatment emphasizes motivational enhancement over confrontational drama, supported by a multidisciplinary team approach to facilitate change.

Although the clinical role of the ASAP providers and the administrative domain of the command are clearly differentiated, a collaborative thread is woven between the command and clinical staff through implementation of the “rehabilitation team.” The rehabilitation team concept is developed in AR 600-85 and is a core ingredient of an effective program. With the ASAP clinician serving as chair, the rehabilitation team is composed of the soldier, the unit commander or first sergeant, and others as needed. In its most effective implementation, the rehabilitation team meeting provides the soldier with a positive outlook to start treatment. It offers a forum to clearly define program expectations and to explain the benefits for successful completion, while also articulating the consequences of failure to comply with treatment guidelines. It also offers a setting in which to provide assurances of support to mitigate a soldier’s fears, to explain patient rights, and to discredit some of the myths that pervade early beliefs and undermine success. Careers are more often enhanced than lost through the rehabilitation process. Therefore, it is imperative that soldiers experi-
ence the ASAP staff and command group as a unified team whose primary mission is to conserve personnel and promote health and well-being. Career retention goals and personnel conservation thus are married to rehabilitation efforts through the close collaboration with command.

SUMMARY

Today’s military requires sophisticated knowledge and advanced technical skills to successfully navigate lethal battlefields. Even modest amounts of alcohol can impair crucial decision-making abilities and negatively affect military operations. Military personnel are not immune to the larger social problem of tobacco, illicit drugs, and the misuse of prescription and over-the-counter medications. The military maintains an active biochemical testing program to constantly assess the use of these substances and their impact on military readiness. In addition, each service offers specific administrative rules and clinical support to address the misuse of substances. The best outcome for the individual and the organization results from a collaborative effort involving clinicians, commanders, and a motivated patient to resolve issues of substance abuse.

REFERENCES


25. Medical and Dental Care, Identifying and Treating Drug and Alcohol Dependence. 10 USC §1090 (2010).


