

Marijuana and Cannabinoid Product Awareness Guide



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Marijuana and Cannabinoid Product Awareness Guide

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General Information

Goal: One of the best ways to combat illicit drug abuse by Sailors is to stay informed and keep them informed. From the information presented, participants will become aware of what marijuana is, who is using marijuana, the symptoms of marijuana use (MU) and the health consequences associated with MU.

Objectives

Participants will be able to

- Explain what marijuana is, how marijuana is used and who is using it;
- Identify the behavioral and physical symptoms of MU;
- Cite the long and short-term health effects of MU;
- Identify the most commonly used street terms associated with MU;
- Explain what other cannabinoids (e.g. CBD oil, hemp oil, etc.) are and how they are used.

Information

This document has been developed so the information can be delivered in whole as part of command GMT or in part via Plan-of-the-Day notes, memos, division/workcenter notices, flyers, posters, etc.

Consult Appendix E for additional information.

Appendices

Appendix A – A list of slang terms associated with marijuana, its use, and related paraphernalia.

Appendix B – Myths and truths related to marijuana use suitable for POD/POW or other posting.

Appendix C – A flyer listing the health consequences of marijuana use.

Appendix D – Items suitable for POD/POW or other posting.

Appendix E – List of resources that can be used to obtain additional information.

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Introduction

Marijuana is the most widely abused illegal substance in the United States today (Drug Enforcement Agency, 2017). There are various forms of marijuana that are intended to be consumed in different ways (eating, smoking, vaping, drinking, etc.).

The University of Michigan conducts the Monitoring the Future (MtF) study, a long-term study of high school students and adults conducted since 1975. Figure 1 shows the trends in self-reported rates of annual prevalence of use for marijuana, cocaine, and amphetamines, the three most prevalent drugs used in the civilian community, among 19-to-28 year olds (Schulenberg, et al., 2017).

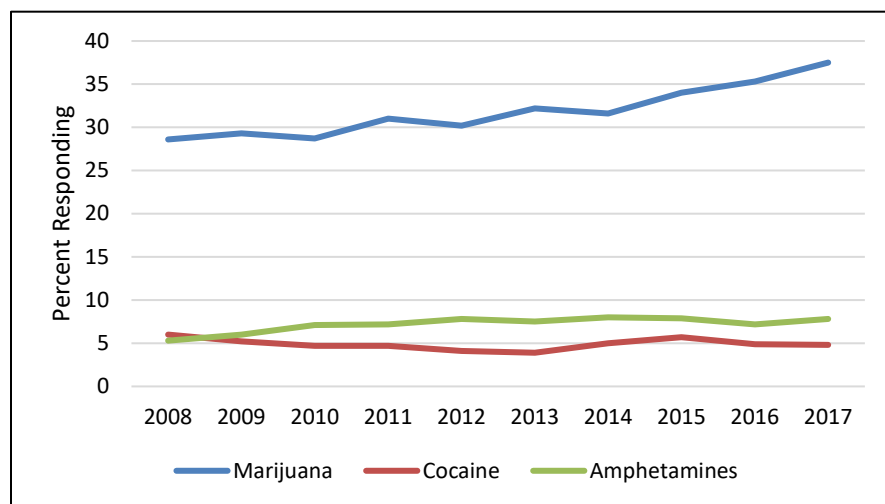


Figure 1. Trends of three of the most prevalent drugs in the civilian community.

On May 26, 1981, an EA-6B Prowler crashed during a nighttime landing on the USS Nimitz. The crash and subsequent explosion and fire killed 14 and injured dozens more. Subsequent autopsies discovered that six of fourteen killed had traces of delta-9 tetrahydrocannabinol (THC) in their systems. This incident was the catalyst for the Navy's Zero Tolerance policy against drug abuse and increased drug testing of all Sailors.

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The Scope of Marijuana Use

24 million Americans aged 12 and older in 2016 have used marijuana in the past month (Ahrnsbrak, Bose, Hedden, Lipari, & Park-Lee, 2017). The latest MtF report (2017) with data for 19- to 28-year-old adults, shows the trend of self-reported MU (figure 2) has been increasing since 2012 (Schulenberg, et al., 2017).

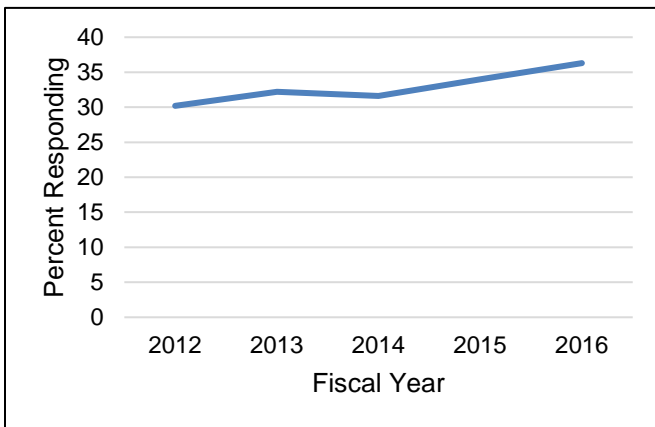


Figure 2. Self-reported MU among 19-28 year olds from the Monitoring the Future study.

The Department of Defense conducted a worldwide Survey of Health Related Behavior Among Military Personnel in 1980. The survey responses revealed that 46% of Navy and Marine Corps junior enlisted used marijuana during the previous year. Since the initial survey, the rates of self-reported MU have decreased (figure 3), most significantly between 2008 and 2015.

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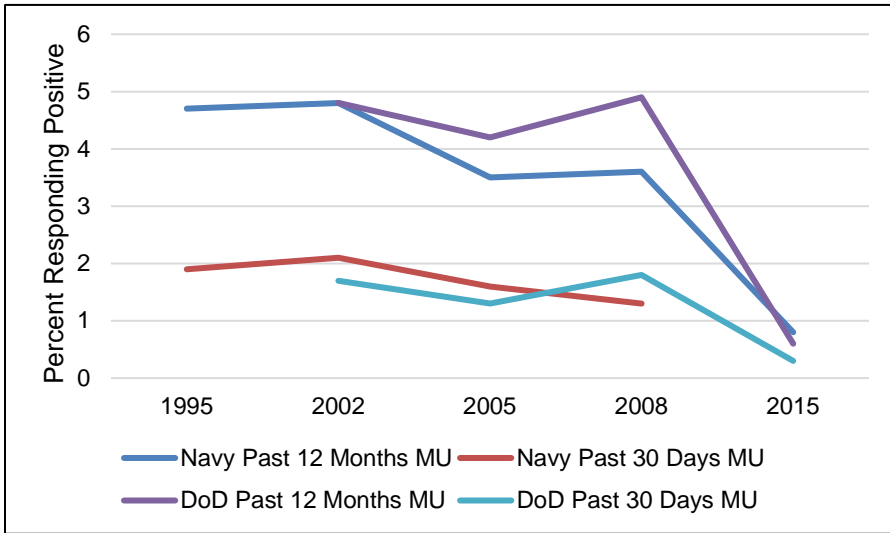


Figure 3. Percent reporting MU from the DoD HRBS.

Marijuana is also the most commonly detected illicit drug found in Navy urinalyses. Figure 4 shows the number of marijuana positives since 2013 (ADMITS, 2018). According to projection estimates, marijuana positives are expected to continue to rise.

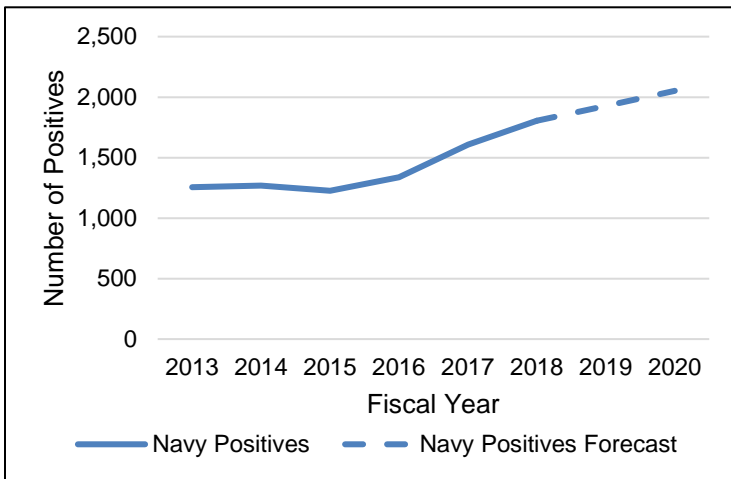


Figure 4. Number of Navy THC positives.

The bulk of Navy THC positives occur in younger Sailors (figure 5, from ADMITS). Using the same age groups as population data is clustered by the Defense Manpower Data Center (DMDC) demonstrates that the distribution is unequally distributed among younger Sailors.

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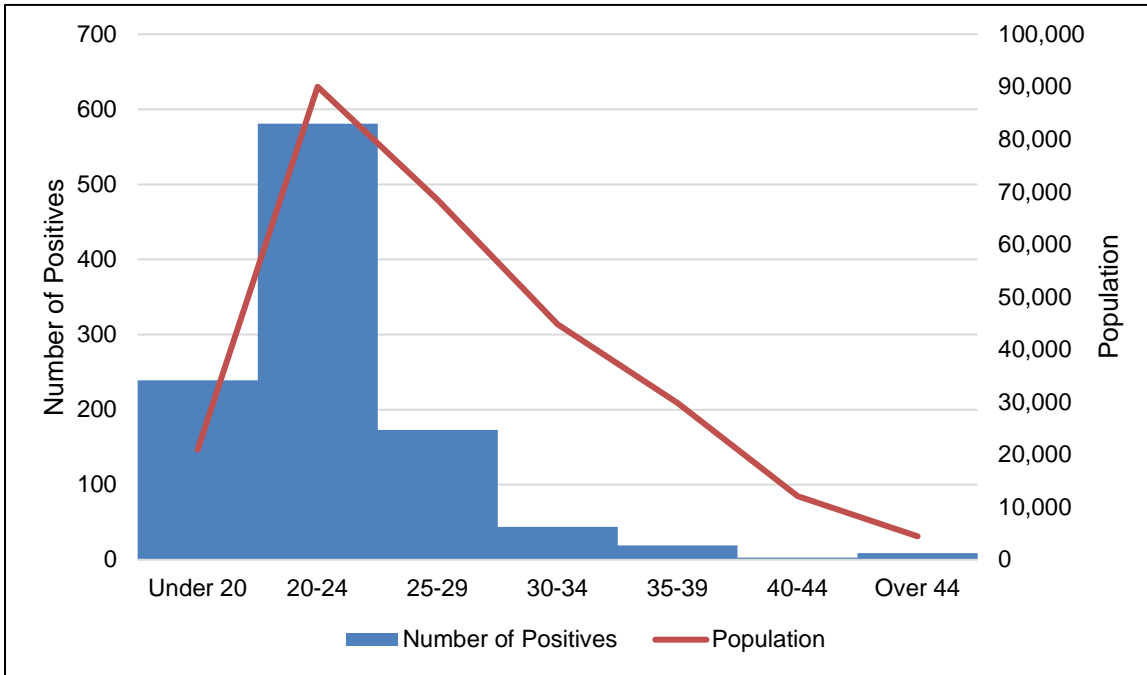


Figure 5. Comparison of the distributions of THC positives and Navy age population.

A majority of THC positives occur in enlisted ranks (figure 6). Enlisted positives make up 98.1 percent of all positives to date in FY18 and are forecast to continue increasing. Officer positives are forecast to increase slightly.

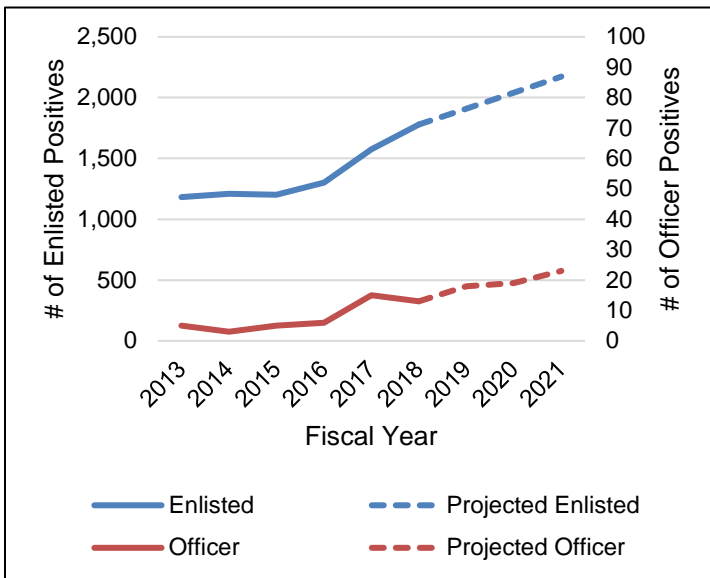


Figure 6. Comparison of THC positives between enlisted and officer ranks.

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Figure 7 shows the total number of positives from 2013-2018 by enlisted rank (blue) and the population distribution among enlisted ranks (red). As can be seen, those in junior enlisted ranks are far more likely to have a positive THC urinalysis.

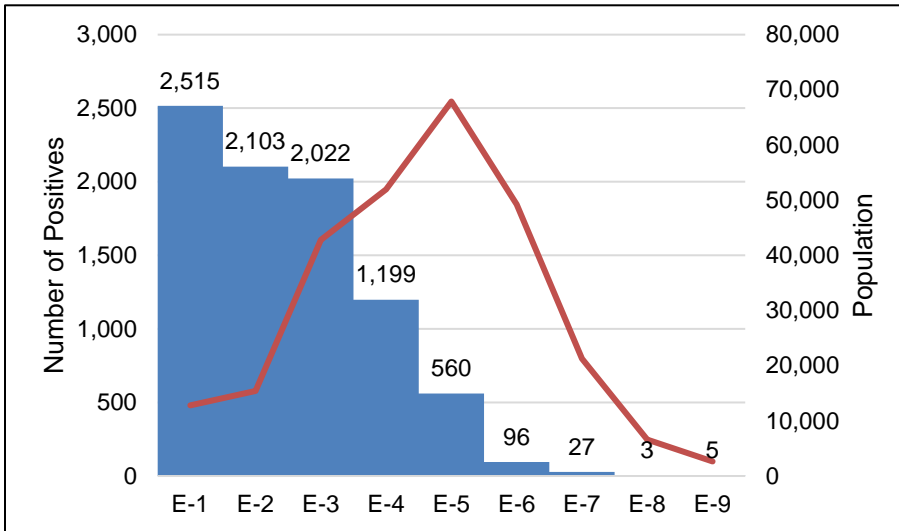


Figure 7. Comparison of THC positives and enlisted rank distribution.

What is Marijuana?

Marijuana refers a shredded green/brown mixture of flowers, stems, seeds, and leaves of the hemp plant *Cannabis sativa* or *Cannabis indica* plant. These plants contain over 480 different chemicals. Delta 9-tetrahydrocannabinol (THC), the main ingredient, is used for its mind altering effect (National Institute on Drug Abuse, 2018). There are three basic THC preparations: the marijuana plant, hashish, and CBD (mainly oils).



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Hashish or hash is a resin of cannabis (highly concentrated form of marijuana). It normally comes in solid or semi-solid form. It has a very high amount of THC, sometimes as high as 18 percent.

Hash oil or cannabis oil is an extract of the cannabis plant. The THC content of hash oil varies by product, but ranges from 10 percent to 30 percent. Hash oil can appear yellow, tan, or black, with golden to light brown being the most common color.



Prescription Cannabinoid Products

Cannabidiol is a medical form of THC. The United Kingdom approved the use of cannabidiol medication (nabiximols, trade name Sativex[®]) to help treat neuropathic pain, uncontrolled spasms, overactive bladder, and other symptoms of multiple sclerosis. The medication is usually delivered using a spray, which is directed into the mouth.

In the U.S., a number of synthetic cannabinoid medications have been approved for use in treating chemotherapy-induced nausea and vomiting. Brand names include Marinol[®], Syndros[®], and Nabilone[®].



A cannabidiol solution mixed with sesame oil (Epidiolex[®]) was approved by the FDA in June 2018 to treat two forms of rare childhood epilepsy.

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There is little evidence at this point to indicate that cannabis is effective in relieving chronic pain, although many cannabis advocates make such claims or that using non-prescription marijuana (smoking, vaping, drinking, etc.) is more effective than the prescription preparations.

How are Cannabis Products Used?

Marijuana

Marijuana is usually smoked as a cigarette (joint, nail), or in a pipe (bong).

It also is smoked in blunts, which are cigars that have been emptied of tobacco and refilled with marijuana, often in combinations with another drug.

Marijuana smoke has a strong, distinctive usually “sweet- and- sour” odor. It is often described as the smell of burning rope.

A growing number of THC edible marijuana products are being sold. These come in many forms including gummy bears, brownies, candies, and lollipops.



Photo of a bong. From: TFS Wholesale

Hashish

Hashish will not burn on its own, so it is often mixed with regular marijuana, called dabbing. Many of the same devices used to smoke marijuana (bong, vaporizer, joints) can be used to smoke hashish.

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Hash Oil

Hash oil is ingested in the same ways hashish is ingested: smoked, vaporized, or eaten. A more recent form of ingestion involves the use of e-cigarettes where the oil is placed in a cartridge and inhaled.

Signs of Marijuana Use

Marijuana's effects are felt within minutes, peak in 10-to-30 minutes, and may linger for two or three hours. A person who smokes marijuana on a regular basis builds up a tolerance to the drug, and will need to smoke larger amounts of marijuana in order to achieve a "high." The intensity of the effects one experiences may vary between individual users.

When marijuana is smoked, the THC passes from the lungs and into the bloodstream, which carries the chemical to the organs throughout the body, including the brain. In the brain, the THC connects to specific sites called cannabinoid receptors on nerve cells and influences the activity of those cells.

Specifically, marijuana over activates parts of the brain that contain the highest number of these receptors.

This causes the "high" that people feel. Other effects include:

- altered senses (for example, seeing brighter colors)
- altered sense of time
- changes in mood
- impaired body movement
- difficulty with thinking and problem-solving
- impaired memory
- hallucinations (when taken in high doses)
- delusions (when taken in high doses)
- psychosis (when taken in high doses)

(National Institute on Drug Abuse, 2018)

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State Marijuana Legislation (SML)

Since 1996, 46 states have passed legislation that legalizes recreational MU, medicinal MU, or THC-related products (oils, pills, etc.) (Hanson, 2018). Although state legislatures have taken steps to legalize and decriminalize marijuana (lessen the criminal penalties for possession and use), marijuana is still listed as a Schedule I drug on the Controlled Substance Act (CSA) Scheduling. Schedule 1 drugs are those classified as having no current accepted medical use as well as a high potential for abuse. Despite legalization or decriminalization of marijuana and THC-related products at some state levels, possession and distribution are still, therefore, federal offenses.

In January 2018, the Department of Justice issued a Marijuana Enforcement Memorandum that allows “federal prosecutors to decide how to prioritize enforcement of federal marijuana laws” (Hanson, 2018). This includes the possibility of federal prosecution of marijuana laws despite state and local laws.

The Navy follows federal laws regarding marijuana. Sailors who test positive for THC during the command urinalysis tests will be processed for administrative discharge. Local state laws do not have any influence on this process.

Outcomes

Legal

The Uniformed Code of Military Justice Article 112a states:

(a) Any person subject to this chapter who wrongfully uses, possesses, manufactures, distributes, imports into the customs territory of the United States, exports from the United States, or introduces into an installation, vessel, vehicle, or aircraft used by or under the control of the armed forces a substance described in subsection (b) shall be punished as a court-martial may direct.

(b) The substances referred to in subsection (a) are the following:

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- (1) opium, heroin, cocaine, amphetamine, lysergic acid diethylamide, methamphetamine, phencyclidine, barbituric acid, and marijuana, and any compound or derivative of any such substance.
- (2) Any substance not specified in clause (1) that is listed on a schedule of controlled substances prescribed by the President for the purposes of this article.
- (3) Any other substance not specified in clause (1) or contained on a list prescribed by the President under clause (2) that is listed in Schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812).

SECNAV Instruction 5300.28 (series) states in part:

The wrongful use, possession, manufacture, distribution, importation into the customs territory of the United States, exportation from the United States, and introduction onto an installation, vessel, vehicle, or aircraft used by or under the control of the Armed Forces by persons in the DON of controlled substance analogues (designer drugs), products containing synthetic THC agonists (e.g., spice), natural substances (e.g., fungi, excretions, plant substances such as salvia divinorm), and or a prescribed or over-the-counter drug or pharmaceutical compound, with the intent to induce or enable intoxication, excitement, or stupefaction of the central nervous system, is prohibited and will subject the violator to punitive action under [the UCMJ] or adverse administrative action or both. Although not illegal to possess, using chemicals illicitly for purposes other than what they are intended for, (e.g., rubbing alcohol, ethanol), and propellants and inhalants (e.g., dust-off, nitrous oxide), is prohibited and the violator will also be subject to punitive action under [the UCMJ] or adverse administrative action or both.

OPNAV 5350.4 (series), Enclosure (2), paragraph 1.b. states, in part:

Drug abuse is also the wrongful use of controlled substance analogues, such as designer drugs, illicit use of anabolic steroids, and use of prescription and/or over-the-counter drugs and medications. For the purpose of this instruction, this category includes consumption of substances for other than their intended use, e.g. glue, air freshener, gasoline fume sniffing, herbal products, and other similar substances.

OPNAVINST 5350.4 (series), Enclosure (2), paragraph 1.d. states, in part:

Navy members who abuse drugs, including those who self-refer, per the provisions outlined in [SECNAVINST 5300.28E] will be screened for dependency, disciplined as appropriate, and processed for [administration separation].

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Navy policy is very clear: substance abuse will not be tolerated. Sailors who test positive will be processed for administrative separation and could receive a discharge characterization Other Than Honorable (OTH), which can affect some veteran's benefits and employment opportunities.

NAVADMIN 076/18 requires the Navy to report unlawful drug users to the Federal Bureau of Investigation for inclusion into the National Instant Criminal Background Check System (NICS). The implication of being on this system is that Sailors who are found to be unlawful drug users (which includes abuse of prescription medications) will not be able to purchase firearms or ammunition.

Another implication of having this in your criminal history background is lost employment opportunities. Some employers check NICS on new applicants. An entry here could mean you don't get the job.

Health-Related Outcomes

Marijuana contains more than 400 known toxins and cancer-causing chemicals, which are stored in fat cells for as long as several months. Smoking one marijuana cigarette deposits four times more tar in the lungs than one filtered cigarette. Extended use increases risks of lung diseases and reproductive system abnormalities. Marijuana also affects the body's ability to combat illness.

Many heavy marijuana users suffer the same type of lung issues associated with smoking tobacco (National Institute on Drug Abuse, 2018). These individuals may have daily cough and phlegm, symptoms of chronic bronchitis, and more frequent chest colds. Continuing to smoke marijuana can lead to injured or destroyed lung tissue. However, there is no evidence yet that smoking marijuana is associated with a higher risk of lung cancer than tobacco smoking.

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Marijuana raises the user's heart rate for up to three hours after smoking (National Institute on Drug Abuse, 2018). This increased heart rate can cause heart attacks, especially older users and users with heart problems.

There have been reports that marijuana dispensary employees are advising pregnant women that marijuana is safe to use for nausea associated with the pregnancy, which contradicts what medical doctors are saying (Nedelman, 2018). This is concerning because there are studies that show marijuana use during pregnancy is linked to lower birth weights and increased risk of both brain and behavioral problems in babies as well as problems with attending, memory and problem solving as children (National Institute on Drug Abuse, 2018).

Marijuana also affects brain development. When people begin using marijuana as teenagers, the drug may impair thinking, memory, and learning functions and affect how the brain builds connections between the areas necessary for these functions. Researchers are still studying how long marijuana's effects last and whether some changes may be permanent (National Institute on Drug Abuse, 2018).

Vaping THC, CBD, or synthetic cannabinoids can cause headache, nausea, vomiting, palpitations, dilated pupils, dizziness, confusion, disorientation, agitation, and/or seizures (U.S. Army Public Health Center, 2018).

Life Outcomes

Compared to those who don't use marijuana, those who frequently use large amounts report lower life satisfaction, poorer mental health, poorer physical health, and more relationship problems. People also report less academic and career success. For example, marijuana use is linked to a higher likelihood of dropping out of school. It's also linked to more job absences, accidents, and injuries (National Institute on Drug Abuse, 2018).

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There is some evidence to suggest that a person's risk of heart attack during the first hour after smoking marijuana is nearly five times his or her usual risk. (Mittleman, Lewis, Maclure, Sherwood, & Muller, 2001). This might be caused by marijuana raising blood pressure (in some cases) and heart rate and reducing the blood's capacity to carry oxygen. (Thomas, Kloner, & Rezcalla, 2014). Marijuana may also cause *orthostatic hypotension* (head rush or dizziness on standing up), possibly raising the danger of fainting and falls (Jones, 2002).

Marijuana can have negative effects on memory and learning that can last for days or weeks after the acute effects of the drug wear off (Schweinsburg, Brown, & Tapert, 2008). Someone who smokes marijuana daily could be functioning at a reduced intellectual level most or all of the time. Marijuana smokers have poorer educational outcomes than those that don't smoke marijuana (Macleod, Oakes, & Copello, 2004). Heavy marijuana use may also be linked to lower income, greater welfare dependence, unemployment, criminal behavior, and lower life satisfaction (Fergusson & Boden, 2008; Brook, Lee, Finch, Seltzer, & Brook, 2013).

There is a fair amount of research that suggests that long-term MU impacts a user's intelligence. One study looked at marijuana users that started smoking marijuana heavily in their teens (with an ongoing MU disorder). The study found that those that used marijuana heavily in their teens had an intelligence quotient (IQ) as much as eight points lower (National Institute on Drug Abuse, 2018). Other studies contradict these findings, and MU advocates have used those studies to prove marijuana has no long-term IQ adverse effects.

Where Does Marijuana Come From?

Mexico is the largest source of marijuana found in the U.S. (Drug Enforcement Agency, 2017). To a lesser degree, marijuana comes to the U.S. from Canada and the Caribbean. Marijuana is also grown in

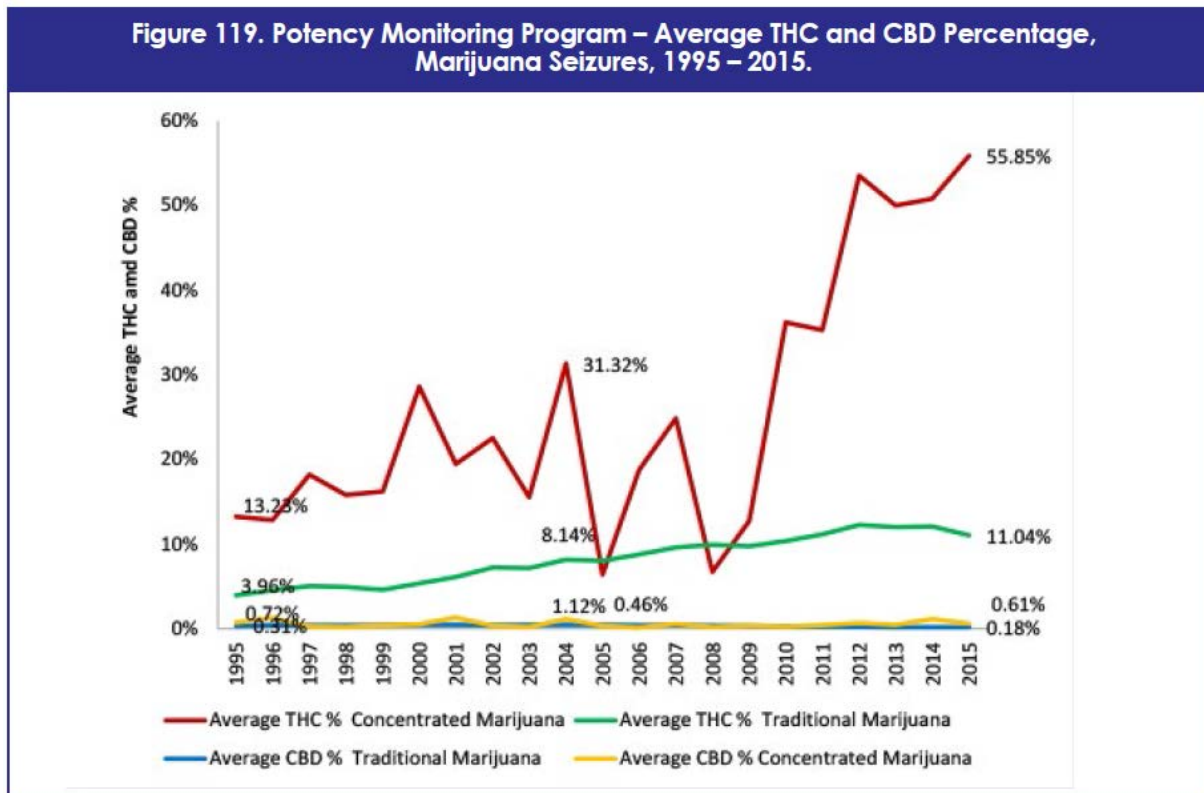
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all 50 states, mostly in California. Three counties in California make up the “Emerald Triangle:” Humboldt, Mendocino, and Trinity. More than 4,400 cannabis grow sites were detected in Humboldt County alone, making this tristate area one of the main marijuana cultivation areas in the U.S.

A certain amount of marijuana is grown legally for research. One such source is the University of Mississippi, which grows marijuana for research purposes and publishes quarterly reports that include the potency levels of marijuana.

Potency

Marijuana potency has increased over the past two decades. The graph below is from the DEA’s 2017 National Drug Threat Assessment. This increase in potency increases the effects of the drug. Sinsemilla, Spanish for “without seed,” is a more potent form of marijuana.



Source: University of Mississippi, Potency Monitoring Program, Quarterly Report 135

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What are the Effects of Marijuana Use?

When marijuana is smoked, the THC passes from the lungs into the bloodstream, which carries the chemical to the organs throughout the body, including the brain. In the brain, the THC connects to specific sites called cannabinoid receptors on nerve cells and influences the activity of those cells.

Hazards

A marijuana joint can contain PCP, LSD, embalming fluid, pesticide, or cocaine. In other words, if you didn't grow it and package it, you don't know what's in the joint. The fact that marijuana is obtained from a dispensary doesn't guarantee that the marijuana is safe. In 2017, the University of California analyzed marijuana samples from 15 dispensaries. Of those tested, 93 percent tested positive for pesticides (Associated Press, 2017). Another news story quoted a lab report that indicated at least one sample was contaminated with fungus (Zouves, 2018).

There are a growing number edible marijuana products commercially available, fueling concerns about their use. Edible marijuana products are regular food products that are infused with cannabis extract (Barrus, et al., 2016). One of the biggest problems users experience with edibles, particularly users that have smoked marijuana, is the delayed response to edible marijuana. In general, the onset of action for edibles is much longer than smoked marijuana (30-90 minutes vice a few minutes, respectively). This leads to users consuming more marijuana product than intended, causing severe cannabis-related behavior impairment, such as hallucinations, delusions, and anxiety. At least one death associated with marijuana intoxication has been reported (Barrus, et al., 2016).

There are many MU advocates who claim marijuana is safe. Smoking plant-based marijuana products produces smoke inhaled into the lungs. Smoke inhaled from marijuana is similar in toxicity to cigarette smoke and contains a variety of toxic chemicals and substances known to cause cancer (Barrus, et

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al., 2016). Tobacco leaf products (e.g. cigarettes) work the same way and are strongly associated with lung cancer, lung disease, and other health-related problems.

Since THC has hallucinogenic properties, impairs body movement, and alters senses, driving under the influence of marijuana is dangerous. In Colorado, the number of times a driver under the influence of marijuana was involved in a fatal car crash doubled between 2013 and 2017 (Migoya, 2017). In a *Denver Post* article, Migoya found that about eleven drivers had THC levels five times the legal limit (in Colorado, a THC level of 5 ng/mL is sufficient to charge someone with a DUI), and one driver's THC level was 22 times the legal limit.

Other Marijuana-Related Products

Cannabidiol (CBD)

There are over 80 different chemicals known as cannabinoids that have been found in the marijuana plant, THC being the main active ingredient. Cannabidiol (CBD) is the second-most abundant cannabinoid, making up about 40% of marijuana extracts (WebMD, 2018). There is some evidence to suggest prescription CBD products, including Sativex[®], are effective in treating symptoms of multiple sclerosis. However, there is still not enough evidence to support many of the claims CBD proponents make about their products effects on other conditions including bipolar disorder, epilepsy, Huntington's disease, insomnia, Parkinson's disease, or schizophrenia (WebMD, 2018).

Prescription cannabidiol products do have medicinal benefits and are cleared by the Food and Drug Administration (FDA). Manufacturers of vaping, oil, and supplement products are also including CBD in their products. However, these over-the-counter products are not cleared by the FDA. They have not gone through the same rigorous testing process that prescription medications go through. Some of these products do not even list all ingredients so it is impossible to tell what these products contain.

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By February 2018, military medical facilities in North Carolina had seen over 60 patients with vaping-related problems. Vape oils marketed as containing CBD oil may contain illegal and/or potentially hazardous substances. Manufacturers of vaping products are not required to list ingredients. As a result, consumers may unintentionally purchase products containing CBD oil, THC, or other synthetic cannabinoids (U.S. Army Public Health Center, 2018).

Marijuana Beverages

A number of companies, including regular beer giants Heineken and Molson Coors, are, or soon will be, producing THC- and CBD-infused beverages, some not containing alcohol. Sales of these beverages reached \$35.6 million across California, Colorado, Oregon, and Washington in 2017 and sales are expected to continue to grow (Yakowicz, 2018). THC and CBD content varies among products. One manufacturer distributes beverages that contain two different amounts: a 10 mg version with THC and a 5 mg version that combines CBD and THC (Williams, 2018). While only a “handful of the nation’s over 2,500 brewers” have started including marijuana in their marketing scheme (Melendez, 2017), one estimate shows the marijuana beer industry could boost industry revenues by \$17 billion (Williams, 2018). Other manufacturers are focusing on non-alcoholic beverages including soda and sparkling water (Adams, 2018). Some manufactures try to minimize the potential opposition to THC/CBD-infused beverages calling them “the new soda” and imply a healing effect by saying CBD is “the new calcium or vitamin C,” and “CBD is the new healer” (Yakowicz, 2018). Sailors must not accept attempts to minimalize THC or CBD content in beverages or to fall prey to unproven statements regarding THC and CBD beverages.



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Again, marijuana is illegal by federal law, so manufacturers have some hurdles to cross before national distribution can occur.



Photo Credit: Canna Cola

Hemp Oil

Hemp oil, or hemp seed oil, is made by pressing the seeds from the hemp plant, which is a relative to cannabis sativa, the plant normally associated with marijuana and CBD. There are two different types of hemp oil, a food grade oil and an oil containing THC. Refined hemp oil is clear and colorless and is used in a number of products, including oils, soaps, shampoos, and detergents. Industrial hemp oil is used in lubricants, paints, inks, fuel, and plastics (Wikipedia, 2018). Food grade hemp oil products do not contain THC. Since some hemp oil is infused with THC, Sailors using this form of hemp oil may test positive for THC. Sailors have the responsibility for making sure they are not using THC-infused hemp oil.

Even though hemp oil is made from plants that do not have high levels of THC, the problem with hemp oil products is that even when refined, hemp oil can still contain some low levels of THC. In Canada, authorities monitor THC content of hemp oil and find that levels usually fall below the detection limit of 4 parts per million (Wikipedia, 2018).

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Despite the low levels of THC in hemp oil products, Sailors could still run into trouble by using hemp products in any form. The best strategy is to refrain from using any product containing hemp oil.

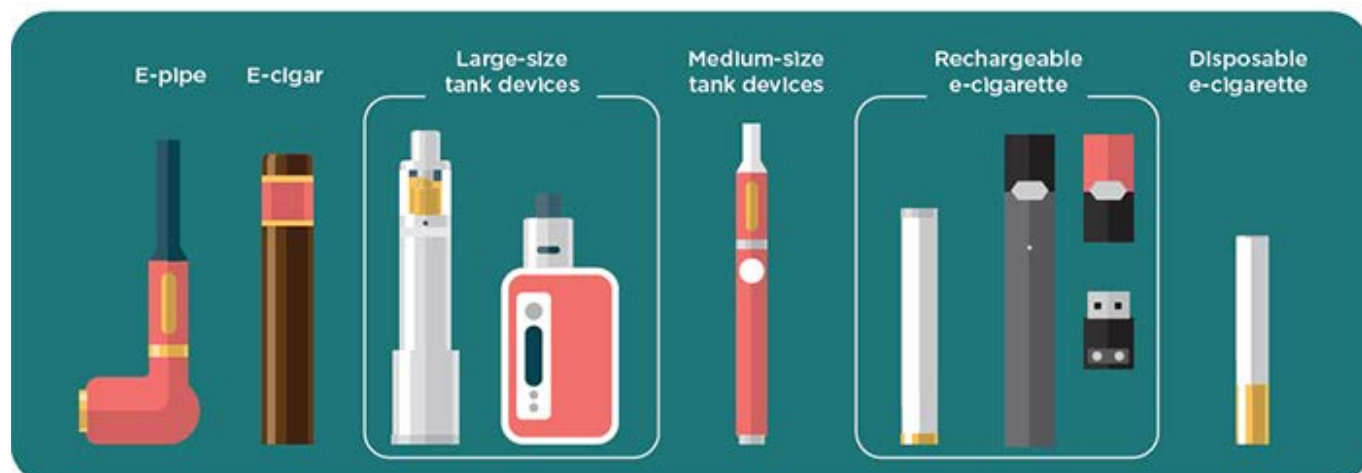


Photo credit: U.S. Fire Administration

E-cigarettes

The earliest patents for electronic cigarettes were issued in 1930 and 1965. The more modern version of the e-cigarette was invented and patented by Hon Lik in China in 2004 (Poklis, Wolf, & Peace, n.d.) as a safe alternative to inhale nicotine without the usual hazards associated with cigarettes. E-cigarettes are also known as electronic nicotine delivery systems (ENDS), personal vaporizers, e-hookahs, and vape pens (Peace, et al., 2016). Since first being available in the U.S. in 2007, e-cigarette use has increased to the point that more than 2.7 million people now use them. The industry generated \$2.8 billion in revenues in 2015 alone (U.S. Fire Administration, 2017).

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The typical e-cigarette sold today has three basic components: a metal or plastic body that contains a heating element, a cartridge that holds the e-cigarette liquid (or e-liquid) for inhaling, and a battery. The heating element heats the e-liquid, to temperatures as high as 212°C or 413°F, to convert the e-liquid to a vapor. The battery powers the heating coil, and in some products, the battery voltage can be regulated by the user to accommodate different substances.

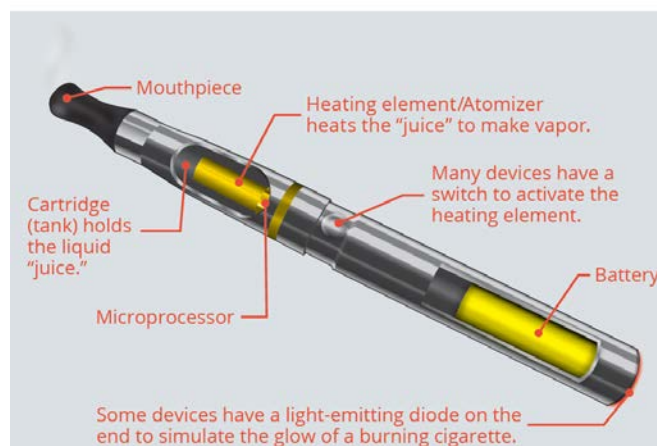


Photo credit: U.S. Fire Administration

E-liquids are vaporized either by the action of negative pressure caused by inhaling through the mouthpiece or by pressing a button that sends the current from the battery through a coil that is wound around a wick. The coil heats the wick, saturated with an e-liquid, which vaporizes the e-liquid. This process, called vaping, allows the vaporized liquid to be inhaled much in the same way as smoking traditional cigarettes.

E-liquids can be purchased at retailers, stores, and via the Internet. The typical e-fluid includes a humectant to prevent evaporation of the liquid, flavoring, and an active drug or drugs. Flavoring can be manipulated to mimic a variety of tastes. Advertised active ingredients include nicotine, caffeine, CBD, and THC (Peace, et al., 2016). Most e-cigarettes have refillable cartridges that allow users to put a wide variety of substances in the system, including liquid cannabis products, (Peace, Butler, Wolf, Poklis, & Poklis, 2016), fentanyl, and cocaine (Breitbarth, Morgan, & Jones, 2018). One of the attractions to using e-cigarettes for the ingestion of illegal drugs is that the characteristic odors put off by illegal drugs is often lost during vaping (Breitbarth, Morgan, & Jones, 2018).

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A number of studies have shown that the unregulated e-fluid market includes products that do not have ingredients in the concentrations advertised, ingredients not on the list of ingredients, or no list of ingredients at all (Peace, et al., 2016; Peace, Butler, Wolf, Poklis, & Poklis, 2016). A recent discovery identified ethanol as an ingredient, although it is not known what function ethanol serves (flavoring or solvent) (Poklis, Wolf, & Peace, n.d.). Peace, et. al. (2016) also found that the “lack of regulation provides opportunities for products to be developed without the oversight for the quantity, quality, and safety of the products.” In May 2016, the Food and Drug Administration (FDA) finalized a rule that brought e-cigarettes and associated products under FDA authority and regulation.

One of the areas the FDA has started regulating is the number of medical claims made by marijuana or CBD product manufacturers and sellers. Products intended for ingestion are required to have warning labels and language that alerts users that the product is “not intended for the diagnosis, cure, mitigation, treatment, or prevention of a disease” (Peace, Butler, Wolf, Poklis, & Poklis, 2016).

One reason people begin using e-cigarettes is to quit smoking. Unfortunately, there is insufficient evidence at this point to support the claim that e-cigarettes aid in smoking cessation or for professionals to recommend switching to e-cigarettes (Centers for Disease Control and Prevention, 2018). In fact, one CDC-supported study indicates that most adult cigarette smokers do not stop smoking cigarettes while using e-cigarettes (Caraballo, Shafer, Patel, Davis, & McAfee, 2017). While e-cigarettes are less harmful than regular cigarettes, the CDC also warns that they are not without health risks. Aerosol can include nicotine, heavy metals (e.g. lead), volatile organic compounds, cancer-causing agents (Centers for Disease Control and Prevention, 2018), ethanol (Peace, Krakowiak, Wolf, & Poklis, 2017), and diethylene glycol (Peace, et al., 2018)

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Dangers of e-cigarettes

There are two primary dangers of e-cigarette use: unregulated e-liquids and explosion of the device itself. According to the U.S. Army Public Health Center (2018), many vape manufacturers do not disclose that their products contains illegal or dangerous substances. With the FDA regulating the e-liquid industry, users will soon be confident that the products they buy will actually contain what is advertised in the stated concentration. An additional danger of e-cigarettes is the risk of explosion. The U.S. Fire Administration (2017) reported that there were 195 separate incidents involving e-cigarettes between 2009 and 2016. Thirty-eight of those incidents involved severe injury. The first death associated with an exploding e-cigarette occurred on May 5, 2018 in Florida (Meixler, 2018).

Summary

Marijuana is illegal for Sailors to use, regardless of the legal status of marijuana in the state in which a Sailor may be stationed. Sailors cannot use state legalization laws as a defense for a positive urinalysis result. Marijuana is also illegal to possess on any military installation, again regardless of state law. Military members can be charged under the UCMJ; civilians (spouses, employees, contractors) face disbarment (i.e. not being allowed on base).

MU by dependents is prohibited on base or in base housing. Dependents caught using or possessing marijuana in violation of federal law and DoD and Navy policy can be barred from entering a military installation of the dependent's spouse. Dependents living off-base should refrain from using marijuana products to prevent any "unintentional" ingestion by the Sailor. Sailors have a responsibility and an obligation to be sure of the medications they take, regardless of the time of day or who gives it to them. Edible THC products should also be avoided in order to prevent any "unintentional" ingestion by the Sailor.

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The bottom line is that Sailors must avoid using any product that contains THC, CBD, or hemp products. The Sailor's career is not worth the risk.

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Appendix A - Marijuana Slang Terms

Marijuana Slang Terms

420	Boo	Djamba
<i>A-Bomb (marijuana mixed with heroin)</i>	Boom	Dody
Acapulco Gold	<i>Branches</i>	Dojo
Acapulco Red	Broccoli	Domestic
Ace	Bud	Donna Juana
African Black	Budda	Doobie
African Bush	Burritos Verdes	Downtown Brown
Airplane	Bush	Drag Weed
<i>Alfalfa</i>	Cabbage	Dro (hydroponic)
Alfombra	<i>Café</i>	Droski (hydroponic)
Alice B Toklas	<i>Cajita</i>	Dry High
All-Star	Cali	<i>Elefante Pata</i>
<i>Almohada</i>	<i>Camara</i>	Endo
Angola	Canadian Black	<i>Escoba</i>
Animal Cookies(hydroponic)	Catnip	<i>Fattie</i>
Arizona	Cheeba	Fine Stuff
Ashes	Chernobyl	Fire
Aunt Mary	Cheese	Flower
AZ	Chicago Black	Flower Tops
Baby	Chicago Green	Fluffy
Bale	Chippie	Fuzzy Lady
Bambalachacha	Chistosa	<i>Gallina</i>
Barbara Jean	Christmas Tree	Gallito
Bareta	Chronic	Garden
Bash	Churro	<i>Garifa</i>
<i>Bazooka (marijuana mixed with cocaine paste)</i>	Cigars	Gauge
BCBudd	Citrol	Gangster
Bernie	Cola	Ganja
Bhang	Colorado Cocktail	Gash
Big Pillows	Cookie(hydroponic)	Gato
Biggy	Cotorritos	Ghana
<i>Bionic (marijuana mixed with PCP)</i>	Crazy Weed	Gigi(hydroponic)
Black Bart	Creeper Bud	Giggle Smoke
Black Gold	Crippy	Giggle Weed
Black Maria	Crying Weed	Girl Scout Cookies (hydroponic)
Blondie	Culican	Gloria
Blue Cheese	Dank	Gold
	<i>Devils's Lettuce</i>	Gold Leaf
	Dew	Gold Star
	Diesel	Gong

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Blue Crush	Dimba	Good Giggles
<i>Blue Dream</i>	Dinkie Dow	Gorilla
Blue Jeans	<i>Diosa Verde</i>	Gorilla Glue
Blue Sage	Dirt Grass	Grand Daddy Purp
Blueberry	Ditch Weed	Grass
Bobo Bush	Dizz	Grasshopper
Green	Kilter	<i>MMJ</i>
<i>Green Crack</i>	King Louie	Mochie (hydroponic)
Green-Eyed Girl	Kona Gold	Moña
Green Eyes	Kumba	Monte
Green Goblin	Kush	Moocah
Green Goddess	Laughing Grass	Mootie
Green Mercedes Benz	Laughing Weed	Mora
Green Paint	Leaf	Morisqueta
Green Skunk	Lechuga	Mostaza
<i>Greenhouse</i>	Lemon-Lime	Mota
Grenuda	<i>Leña</i>	Mother
Greta	Liamba	Mowing the Lawn
Guardada	Lime Pillows	Muggie
Gummy Bears	Little Green Friends	<i>My Brother</i>
Gunga	Little Smoke	Narizona
Hairy Ones	<i>Llesca</i>	Northern Lights
Hash	Loaf	<i>Nug</i>
Hawaiian	Lobo	O-Boy
Hay	Loco Weed	OG
Hemp	<i>Loud</i>	O.J.
Herb	Love Nuggets	Owl
Hierba	Love Weed	Paja
Holy Grail	<i>Lucas</i>	Palm
Homegrown	M.J.	Paloma
Hooch	Machinery	<i>Palomita</i>
<i>Hoja</i>	Macoña	Panama Cut
Humo	Mafafa	Panama Gold
Hydro	Magic Smoke	Panama Red
Indian Boy	Manhattan Silver	Pakalolo
Indian Hay	<i>Manteca</i>	Parsley
Jamaican Gold	Maracachafa	<i>Pasto</i>
Jamaican Red	Maria	<i>Pasture</i>
Jane	Marimba	<i>Peliroja</i>
Jive	Mariquita	Pelosa
Jolly Green	MaryAnn	Phoenix
Jon-Jem	Mary Jane	Pine
Joy Smoke	Mary Jones	<i>Pink Panther</i>
Juan Valdez	Mary Warner	<i>Pintura</i>
Juanita	Mary Weaver	<i>Plant</i>
Jungle Juice	Matchbox	Platinum Cookies (hydroponic)
Kaff	Matraca	Platinum Jack
Kali	Maui Wowie	Pocket Rocket

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Kaya	Meg	Popcorn
KB	Method	<i>Porro</i>
Kentucky Blue	<i>Mersh</i>	Pot
KGB	Mexican Brown	Pretendo
Khalifa	<i>Mexicali Haze</i>	<i>Prop215</i>
Kiff	Mexican Green	Puff
Killa	Mexican Red	Purple Haze
<i>Purple OG</i>	Shrimp	Tosca
Queen Ann's Lace	Shwag	<i>Train Wreck</i>
<i>Red Hair</i>	Skunk	Trees
Ragweed	Skywalker(hydroponic)	<i>Trinity OG</i>
Railroad Weed	Smoke	Tweeds
Rainy Day Woman	Smoochy Woochy Poochy	<i>Valle</i>
Rasta Weed	Smoke Canada	Wake and Bake
Red Cross	<i>Sour OG</i>	Weed
Red Dirt	Spliff	Weed Tea
Reefer	Stems	Wet (marijuana dipped in PCP)
Reggie	<i>Sticky</i>	Wheat
Repollo	Stink Weed	White-Haired Lady
Righteous Bush	Sugar Weed	Wooz
Root	Sweet Lucy	Yellow Submarine
Rope	Tahoe (hydroponic)	Yen Pop
Rosa Maria	<i>Tangy OG</i>	Yerba
Salt and Pepper	<i>Terp</i>	Yesca
Santa Marta	<i>Terpenes</i>	Young Girls
Sasafras	Tex-Mex	Zacate
Sativa	Texas Tea	Zacatecas
<i>Shoes</i>	<i>Tigitty</i>	Zambi
Sinsemilla	Tila	<i>Zip</i>
Shmagma	Tims	Zoom (marijuana mixed with PCP)
Shora	<i>Top Shelf</i>	

Marijuana Concentrates/Hash Oil

710	Ear Wax	<i>Rosin</i>
<i>BHNO</i>	<i>Edibles</i>	<i>Rosin Tech</i>
BHO	<i>E Nail</i>	SAP
<i>Black Glass</i>	Erri	<i>Sauce</i>
<i>Bubble Hash</i>	<i>Extract</i>	Shatter
Budder	<i>Full Melt</i>	<i>Solventless</i>
<i>Butane Hash Oil</i>	<i>Glob</i>	<i>Terp Sauce</i>
<i>ButaneHoneyOil</i>	<i>Gorilla Glue</i>	<i>THCA</i>
<i>Caviar</i>	<i>Heady</i>	<i>THCA Crystal</i>

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CBD
CBD oil
Crystalline
Crumble
Dabs
Dipper

Honey Oil
IWE
Ice Water Hash
Klear
Live Resin
Moon Rocks

THCA Crystalline
THCA Powder
Trichrome
Wax

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Other Marijuana-Related Slang Terms

Bag – A plastic bag containing marijuana.

Blow a Number – use cannabis.

Blunt – A hollowed out cigar filled with marijuana.

Bong – a cylindrical water pipe used to smoke marijuana.

Bud – a tight cluster of marijuana leaves, stems, and seeds.

Bullet/Bullies – cannabis in tin foil.

Burnout – a slang term for a state of apathy and deadened perceptions which can result from habitual use of marijuana.

Buzz – slang term for a high or a drug-induced euphoria.

Cabbage – least potent part of cannabis plant, i.e. the leaves.

Deal/Deal Bag – cannabis in plastic bag.

Head – primo or solid. Most potent part of cannabis plant, the flowering part of the female plant.

High – a widely used slang term for euphoria and intoxication.

Hit – a single drag or inhalation of marijuana smoke.

Joint – a hand-rolled marijuana cigarette.

Killer – High potency marijuana such as sinsemilla or Thai-stick.

Loaded – slang term for state of being high or intoxicated.

Oil/Hash Oil – a form of cannabis which is extracted or distilled from cannabis sativa.

Pipe – used to smoke cannabis.

Roach – the small end of a marijuana joint which remains after most of the cigarette is smoked. Can be sniffed or eaten.

Roach Clip – a device used to hold the roach or the tail end of a marijuana joint.

Rolling Papers – cigarette papers used to make a marijuana joint.

Sensemilla – A highly potent form of marijuana that has high amounts of THC than regular marijuana.

Sherm – marijuana dipped in formaldehyde.

Shotgun – Method of using cannabis.

Smoking Stones – paraphernalia used to hold marijuana joints while smoking.

Spaced Out – slang term for a drug-induced state of being lost or out of touch with surroundings.

Spotting – using cannabis oil by burning on tin foil.

Stash – any container or place used to store marijuana or other drugs.

Stoned – slang term for being high or intoxicated on marijuana.

Toke – slang term for art inhalation of marijuana or hashish smoke.

Take a Toke – use cannabis.

Water Pipe – paraphernalia used to smoke marijuana or hashish which filters the smoke through water.

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Appendix B - Myths and Facts

Myth – Using vape oils is okay because they don't contain THC.

Truth – Vape oils are currently not regulated by the government. However, as a consequence, many vape oils contain ingredients that are not listed anywhere. Some vape oils contain CBD. Ingesting CBD can result in a positive THC urinalysis. Current Navy policy requires commands to initiate administrative separation for all THC positives. Vaping CBD products (knowingly or unknowingly) can result in adverse action up to and including separation.

Myth – It's okay to use CBD products because they're not marijuana.

Truth – CBD is a main ingredient of marijuana. It is illegal to consume CBD in any form. You can still test positive for THC.

Myth – Smoking marijuana is safer than smoking cigarettes.

Truth – Comparing smoking marijuana to smoking cigarettes, which are directly linked to lung disease and cancer, isn't a good start to any argument. There are studies that highlight results that smoking marijuana doesn't hurt the lungs as much as cigarettes. Buried in studies like this are some qualifiers: cigarette smokers can smoke 10-20 cigarettes a day while marijuana users only smoke two to three times a month. Heavy marijuana smokers are rarely compared to heavy smokers. So these studies compare heavy smokers to occasional marijuana users, not a good comparison.

Myth – There are no adverse health effects associated with smoking marijuana.

Truth – According to the American Lung Association, smoking marijuana leads to greater exposure to tar with each inhalation. Smoking marijuana can also cause chronic bronchitis, damage the cell linings of the large airways, chronic cough, phlegm production, wheezing, and acute bronchitis.

Myth – Today's marijuana isn't any stronger than it used to be.

Fact – Today's marijuana can be as much as four times as strong as it used to be. This means there is more THC per same size dose (such as a joint).

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Myth – Synthetic marijuana products (such as spice, K2, etc.) are safe alternatives to marijuana since you won't test positive for THC.

Truth – Whether you test positive for THC or not will depend on the ingredients, which are almost never listed on the package, which, by the way, is usually marked “not for human consumption.” Synthetic cannabinoids (SYCANs) are not safe alternatives. Ingredients vary from product to product and can include toxic chemicals. SYCANs can be up to 100 times as powerful as marijuana and can cause hallucinations, stroke, nausea and vomiting, psychological crisis (e.g. psychosis), and death. SYCANs are not safe, period. The Navy urinalysis panel includes many of the commonly used SYCANs, so there's still a good possibility you can test positive. Even if you don't, Navy policy prohibits Sailors from using any substance for the purpose of intoxication (or getting high).

Myth – I can use a cleansing or masking agent to pass the urinalysis if I've been consuming marijuana.

Truth – Cleansing or masking agents don't do what they advertise. The urinalysis process works to eliminate the possibility of the introduction of these products into the sample or before giving the sample. Direct observation will eliminate the possibility of a member using a device to introduce someone else's urine into the specimen bottle. Using a device or agents or introducing an adulterant into your sample could result in severe penalties.

Myth – Marijuana is not addicting.

Truth – 30 percent of those that use marijuana may have some degree of marijuana use disorder. Those that start using marijuana before the age of 18 are four to seven times more likely to develop a marijuana use disorder than adults. Marijuana use disorders are often associated with *dependence*—in which a person feels withdrawal symptoms when not taking the drug. People who use marijuana frequently often report irritability, mood and sleep difficulties, decreased appetite, cravings, restlessness, and/or various forms of physical discomfort that peak within the first week after quitting and last up to 2 weeks. In 2015, about 4.0 million people in the United States met the diagnostic criteria for a marijuana use disorder (NIDA, 2018).

Myth – I can use the state legalization status of marijuana as a defense for my positive urinalysis.

Truth – It is illegal for service members to use marijuana in ANY form, regardless of state law. Sailors must avoid any ingestion of marijuana, whether intentional or not. The legal status of marijuana in any state will not be an effective defense for a marijuana positive.

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Myth – Using marijuana and CBD products will help me get off my prescription pain pills.

Truth – Users of marijuana in its various forms are more likely, not less, to abuse prescription drugs including painkillers, stimulants, and tranquilizers. In addition, testing positive for marijuana will result in processing for administrative discharge.

Myth – Studies have found that CBD is effective in treating a wide variety of ailments, including neuropathic pain, pain from arthritis, anxiety, sleeping disorders, and depression.

Truth – The US Food and Drug Administration has approved purified CBD (trade name Epidiolex®) to treat two devastating forms of epilepsy, Dravet syndrome and Lennox Gastaut syndrome. No other forms of CBD have been approved to treat any disease or condition. Military members are not authorized to consume CBD in any form except for those actually prescribed by a physician. Testing positive for marijuana will result in processing for administrative discharge.

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Appendix C – Health Consequences of Marijuana Use Flyer

HEALTH CONSEQUENCES OF MARIJUANA USE

Acute (present during intoxication)

- Impairs short-term memory
- Impairs attention, judgment, and other cognitive functions
- Impairs coordination and balance
- Increases heart rate

Persistent (lasting longer than intoxication, but may not be permanent)

- Impairs memory and learning skills

Long-term (cumulative, potentially permanent effects of chronic abuse)

- Can lead to addiction
- Increases risk of chronic cough, bronchitis, and emphysema
Increases risk of cancer of the head, neck, and lungs

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Appendix D - POD Notes

If you think smoking pot won't affect your driving, you are in for a rude awakening. The likelihood of a car crash is increased by some of the immediate effects of smoking pot--longer reaction time, poor physical coordination, and impaired concentration.

Even though some states have legalized recreational use of marijuana, Sailors are still not allowed to use it. Claiming a state law allows it will not be a defense.

Being discharged for marijuana use could cause you to lose your benefits. Be smart, don't start.

Navy Drug Screening Laboratories test each and every sample for the presence of illegal drugs. Some Sailors actually believe the rumor that labs only test for 20 percent of samples submitted.

Synthetic cannabis products are not safe or legal alternatives to marijuana use. Many of these products contain substances more harmful than marijuana. The use of any substance with the intent to induce or enable intoxication, excitement, or stupefaction of the central nervous system, is prohibited and will subject the violator to punitive action under the UCMJ or adverse administrative action or both.

There are many products out there claiming to contain cannabidiol (CBD) products. These products could contain THC and cause a positive urinalysis result. The best bet is to stay away from any product that claims to contain any substance related to marijuana.

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Appendix E – Marijuana and Other Drug Resources

National Drug Early Warning System (NDEWS)

NDEWS monitors emerging drug use trends to enable health experts, researchers, and concerned citizens across the country to respond quickly to potential outbreaks of illicit drugs such as heroin and to identify increased use of designer synthetic compounds.

<https://ndews.umd.edu/>

List of slang terms associated with drugs

<https://ndews.umd.edu/sites/ndews.umd.edu/files/dea-drug-slang-terms-and-code-words-july2018.pdf>

National Institute on Drug Abuse

<https://www.drugabuse.gov/>

Phone: 301-443-1124

Drug Enforcement Agency

www.dea.gov

National Clearinghouse for Alcohol & Drug Information (NCADI)

Substance Abuse and mental Health Services Administration

<https://www.addiction.com/a-z/samhsas-national-clearinghouse-for-alcohol-and-drug-information/>

Navy Drug Detection and Deterrence Program (OPNAV N170D)

DSN 882-4232 commercial (901) 874-4232.

Email: MILL_N17_DDD@navy.mil

Statistical Resources

Monitoring the Future (Vol. I and Vol. II)

Long-term survey of school students and adults going back to 1975

<http://www.monitoringthefuture.org/>

National Survey on Drug Use and Health

A nationwide study that provides up-to-date information on tobacco, alcohol, and drug use, mental health and other health-related issues in the United States. Each year, NSDUH interviews approximately 70,000 people age 12 and older for this study.

<https://nsduhweb.rti.org/respweb/homepage.cfm>

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