The DRAM, Vol. 2(2) – Alcohol without liquid: Has science gone AWOL?

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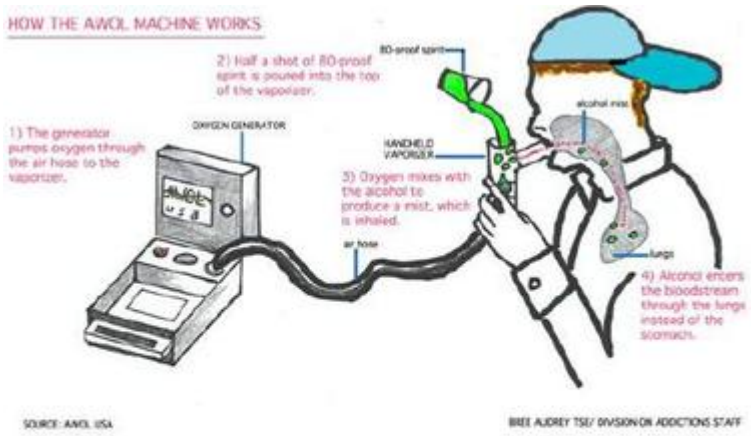
There are countless types of alcoholic beverages on the market, varying in taste, proof, flavor, and more. Due to various scientific studies, we know the impact that these alcoholic beverages have on the body and on health. Recently, a new process of ingesting alcohol, called Alcohol Without Liquid (AWOL), was introduced in the U.S. AWOL allows consumers to orally inhale oxygenated liquor (i.e., distilled spirits) to experience an alleged "euphoric high" (AWOLUSA, 2004). However, researchers have not subjected AWOL to rigorous scientific study. We do not know the effects of this new inhaled route of administration for alcohol on the body or on health.

The AWOL Process

An English businessman named Dominic Simler invented the machine which consists of two parts: the vaporizer and the oxygen generator (Lovell, 2004). The oxygen generator pumps oxygen through a tube connected to the vaporizer, then the user pours a half-shot of an 80-proof spirit of choice into a "diffuser capsule", part of the handheld vaporizer. The consumer then inhales the resulting mist into his or her lungs.



The Company's Claims

The company makes several interesting claims about AWOL. For example, according to AWOL's website, "one of the ways our body gets rid of the alcohol we drink is through the lungs, in our breath. AWOL simply turns that procedure around and lets the alcohol enter through the lungs thus eliminating the dreaded hangover" (AWOL, 2004). However, scientific studies have shown that hangover symptoms result from several causes, including "the direct physiological effects of alcohol on the brain" as well as dehydration and electrolyte imbalance (Swift & Davidson, 1998, p.56). Even if alcohol is inhaled (instead of drank), it might still inhibit vasopressin (antidiuretic hormone) release from the pituitary gland. Consequently, reduced levels of vasopressin prevent the kidneys from conserving water and thereby increase urine production; the result would be dehydration (Swift & Davidson, 1998) and likely hangover symptoms.

AWOL company officials claim that it provides a low-calorie and low-carbohydrate way to consume alcohol because it enters the bloodstream through the lungs rather than the stomach. The low-carbohydrate claim is misleading because distilled spirits do not contain any carbohydrates that the AWOL machine could remove (Answers.com, 2006).

The company also claims that "once the alcohol enters the bloodstream, it affects the body in the same way as drinking alcohol" (AWOLUSA, 2004). When an individual uses AWOL, the alcohol vapor bypasses the consumer's stomach and liver when inhaled. The liver's function is to break down harmful substances like alcohol, but with AWOL, the liver does not filter the alcohol that is absorbed through blood vessels in the lungs. AWOL critics claim that this creates a quicker and more intense impact on the brain (Lovell, 2004). Inhaling as a route of administration usually permits psychoactive drugs to cross the blood brain barrier most rapidly compared to other routes of administration. Similarly, the subjective effect of inhaling is that of a more potent drug experience. The smoked vehicle is the most potent and rapid acting. The possible health risks of inhaling alcohol vapors delivered immediately to the brain and bloodstream are unknown. Scientific studies must be conducted to examine the impact that AWOL has on the brain and the lungs.

The company's website claims that users feel the "same sense of well-being an adult gets from consuming alcohol in the traditional manner, only milder"

(AWOLUSA, 2004). However, researchers should compare AWOL users' level of intoxication to alcohol drinkers' level of intoxication after a measured amount of alcohol. They should look at variables including the time it takes for each type of alcohol consumer (AWOL versus beverage) to feel a "buzz", the effects that each route of administration produces for user experiences (e.g., euphoric, hyperactive, or lethargic feelings), and blood alcohol level.

The Public's Claims

There is growing concern about AWOL's availability (both the $2,895 four-person bar machine and the $299 portable model are for sale to bars and individuals (Burge, 2006)). Such concerns have provoked both additional claims not yet tested by science and legislative initiatives. Several legislators have introduced bills that would ban the machines. In January, Massachusetts Rep. John Quinn stressed that "the whole concept behind these machines is to glorify the reckless consumption of alcohol. It's almost like taking a hit, as opposed to drinking it the normal way" (Wallace, 2006, p.2). New York Assemblyman Richard Brodsky agrees, stating "This machine turns alcohol into a hard drug, which is just wrong" (Flagg, 2004, p.B3). AWOL already has been banned in Colorado, Indiana, Kansas, and Arizona. Eighteen other states have bills looking to do the same (Wallace, 2006). In New York, Legislator Jon Cooper introduced a bill banning AWOL that legislators approved unanimously in September 2004, saying that users risked brain damage and addiction, and were likely to drive drunk (Rather, 2004).

Although these claims were not scientifically founded, AWOL critics hypothesize that users might be unaware of their limits of vaporized alcohol, or the particular effect of vaporized alcohol on their bodies. They could make unsafe decisions based on their lack of awareness or feeling of actually being "drunk". AWOL users would intake alcohol more quickly without the usual safeguards against overdrinking, such as the full feeling from liquid in the stomach.

AWOL's Response

Kevin Morse, president of distributor Spirit Partners, Inc. (which introduced AWOL to the U.S.), claimed that AWOL is "now able to dispel the rumors that have been expressed in some media reports and show that AWOL is simply a fun, new, exciting way for adults to enjoy alcohol in a responsible manner" (AWOLUSA, 2004). However, currently there is no scientific evidence that supports his claims.

The Need for Science

Consumers need to learn more about the possible risks associated with inhaling oxygenated alcohol. Research must be conducted to provide potential users with necessary knowledge about alcohol vapor and their health; this research also can inform legislation that might regulate AWOL. Science already has found probable hangover causes from drinking alcohol; researchers should conduct studies examining whether AWOL users indeed avoid hangover symptoms. Research must also look at the impact that inhaling alcohol has on the brain, heart, and lungs. Science already has shown that inhaling certain substances (e.g., tobacco) poses serious risks to the lungs; inhaling alcohol, a solvent, also could have a negative effect on the bodily organs.

When new technology like AWOL appears on the market, rigorous scientific testing is necessary to objectively examine its consequences on the human body. Without scientific information, we are left with company claims competing with media and legislators' claims. Both sides would be more persuasive if they could present scientific evidence supporting their claims and concerns.

—Bree Audrey Tse

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