



VAPING

Tobacco and Marijuana



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Vaping: Tobacco and Marijuana

What is Vaping?

In the 1960s, the private nonprofit publication, Consumer Reports, responsibly reported what the federal government had been pressured to avoid telling the public, i.e., that tobacco was unequivocally killing hundreds of thousands of Americans a year.

The drug nicotine created an addiction, typically leading to a lifetime of compulsive tobacco use. However, it was the hot smoke containing a variety of chemicals that most seriously compromised lung tissue, not the nicotine. The hot smoke was damaging the lungs and killing millions, primarily through lung cancer. The heavy continuous exposure to smoke and benzo(a)pyrene was endangering millions.

Although nicotine itself can be toxic in highly concentrated forms and is amazingly addictive, it always had been the collateral damage from inhaling the hot tobacco smoke that was presenting the most danger.

Since then, the tobacco industry has been trying to identify at least a **perceived** safer pattern for customers to use nicotine. At first, they began promoting so-called “filtered” then “light” cigarettes

which were marketed with an image, if not the reality of safety. Presently, the “safer” response is a mass produced, easy-to-use and stylish device to deliver nicotine minus the traditional smoke—their solution is “vaping”. Or, as a tobacco company once put it, a path to “designing a smoke-free future.” Users would receive the drug through steam not smoke.

Vaping involves a tool that efficiently heats a lipid or oil infused tobacco or other organic compound, especially marijuana, in a way where they will convert into an aerosol through non-combustible heat. Presumably then, the mood and mind-altering compounds in tobacco and marijuana may be experienced without inhaling hot smoke, thereby avoiding smoke-induced lung damage.

The tobacco-vaping consumer will still become addicted, potentially for life, but will significantly diminish risks associated with inhaling smoke.

The appeal for the marijuana user, who can now obtain extracted alleged marijuana compounds in oil-infused cartridges, often illegally through the Internet, is different.

Marijuana use is illegal for all underage adolescents and for adult recreational users in many states. Avoiding detection is obviously desirable both to avoid legal consequences and being stigmatized. Vaping essentially eliminates the telltale pungent scent of burning marijuana and, if observed with a vaping instrument, the marijuana use is also disguised as tobacco. Significantly, the irritating discomfort of inhaling hot marijuana smoke is also reduced.

There are a number of vaping tools available, but the recently configured “vaping pen” is the most



Source: Shutterstock

utilized and fundamental to the recent wave of vaping both marijuana and tobacco. Looking a bit like a stylish, enlarged pen, the instruments can be purchased on the internet or at a local convenience store or gas station. There are many enticing designs and stylized kits that can also be purchased to personalize or convert the vaping tool into an attractive necklace or pendent. After purchasing the pen, a small battery is inserted. Then, at stores that sell tobacco or marijuana products or through the internet, sets of cartridges can be purchased for insertion, heating, aerosolizing, and smokeless inhalation.



Source: Shutterstock

Marijuana cartridges containing THC, the psychoactive ingredient in marijuana, can be purchased on the internet with minimal effort and sold illegally to minors, or sometimes legally to adults in states that have legalized recreational use. Some, often contaminated, cartridges of a minimally intoxicating hemp product termed cannabidiol or CBD also can be purchased. Government tests in 2021 have found that around 40% off the street illegal CBD cartridges were adulterated with actual marijuana.

The actual vaping process involves a lipid or an oil being heated to the point where it can blend with and vaporize plant extracts. The inhalation includes the oils used, often coconut oil or sometimes Vitamin E-based oils, as well as flavorings. In the case of tobacco, glycol compounds may be used and fruit or candy flavorings had been sometimes incorporated. Presently, several tobacco companies have agreed to limit the use of many flavorings that would be especially appealing to adolescents. There have also been concerns about the potential toxicity of some of the flavoring compounds, especially when heated and introduced directly to lung tissue. There is a serious risk with the use of vitamin E-based pills.

What's Actually Going On?

The world's major tobacco distributors have been dramatically shedding users because people, especially Americans, aren't smoking at anything close to previous thresholds. Their long-term financial business plans involved institutionalizing the use of tobacco by young people, typically locking-in lifelong customers. Between health warnings and regulation use has significantly decreased, especially among youth. In 1976, a little less than 30% of all senior high school students in America reported using tobacco "within the last month." Today that number is under 4% and dropping. Altria, a major tobacco corporation, reluctantly projected that use of their products would continue to decline by at least another 5%.

The profound decrease in revenues, state and federal regulation, and, particularly, civil litigation, are also taking a financial toll on tobacco providers. This regulatory and legal response is understandable considering that, in the United States alone, there are annually 480,000 deaths related to smoking tobacco. Mortality numbers are decreasing with reduced use, but past use will continue to take many lives well into the future.

The remedy was to promote a safer use pattern involving vaporizing. The process of vaporizing had been around for decades, but recently the tobacco industry designed and successfully marketed simple, appealing sets of paraphernalia for heating and vaporizing tobacco.

Modern vaporizing is quickly spreading throughout the world as a new, and potentially safer way to enjoy a plant-based intoxicant. In Japan and Switzerland, the product is identified as Ploom, in Britain, it is iFuse and in South Korea, Lil. In America, the vaping market is essentially divided between the tobacco companies Philip Morris, with its brand of vaporizer, IQOS, and Altria's brand, identified as Juul. The Washington Post reported that pre-pandemic the rapid shift to vaping between 2009 and 2019, tobaccoists constituted the fastest area of "Business and Job growth" in American retail.

Interestingly, Altria and Philip Morris attempted to merge and create one of the largest tobacco companies in the world, but following recent public and regulatory concerns, the attempted merger was called off.

Is Vaping Dangerous?

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Although more investigation is needed to determine the vaping agent or agents responsible, there is clearly an epidemic that begs for an urgent response.”

—Professor David Christiani
Harvard School of Public Health

The most straightforward answer to the question of risk, is that vaping should be considered less dangerous than compulsively inhaling burning tobacco in terms of lung cancer and probably several other tobacco-related health problems. However, the public health consequences are not understood and serious risk from vaping has been identified, especially involving often adulterated marijuana and CBD. Many tobacco/nicotine concerns relate to other ingredients contained in lawfully-marketed cartridges, but there are special risks regarding illegally-produced marijuana/CBD cartridges.

There is a growing body of tobacco-related vaping research, but much of it relates to heavy-dose animal studies, with a large amount of publicly released information funded with support from the tobacco industry or, historically anti-tobacco organizations. Questions involving applicability and bias are inherent in many lay publications including misinterpretations of legitimate research.

In the case of marijuana use, the unfortunate interpretation of federal marijuana criminal drug scheduling restricted research regarding public health impact.

Especially in the case of vaping, we know little about the health consequences. We do know that vaping tools are being used by many for marijuana and CBD and that there have been a number of related cases of serious health consequences including hospital admissions and several deaths in Europe.

The lipids or oils especially used to facilitate vaping THC or CBD are concurrent with and possibly causative of the serious and sometimes life-threatening lung damage.

Lung biopsies from 17 individuals with lung damage post marijuana vaping were analyzed by Mayo Clinic pathologists who found no trace of lipid damage. Yet, subsequently the Centers for Disease Control found vitamin E lipid traces in lung tissue of 29 marijuana vaping patients with lung damage—drawn from 10 different states.

The connection between vaping illegal marijuana products, often containing vitamin E lipids, for vaping and consequently lung damage seems likely, although more research is required.

While illegal or unpopular behavior is typically underreported, recent Gallup data indicates around 13% of American adults, and 32% of young adults reported using marijuana on a semi-regular basis. Considering that, according to the Washington Post, as of 2018, 37% of high school seniors admitted to vaping the threat of serious consequences as a result of vaping illegal marijuana products is ominous.

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These findings (*Analysis of 29 lung damaged illegal marijuana vapers*) provide direct evidence of vitamin E acetate at the primary site of injury within the lung.”

—Dr. Anne Schuchat, Deputy Director
The Center for Disease Control

The vaping process permits more discrete use and THC or CBD cartridges can be obtained through the internet or the same institutionalized underground distribution systems that provide marijuana. It is likely that “vaping” marijuana is, or may become common, unless public health warnings or regulatory action counters the trend.

The Future of Vaping is Dependent on Messaging

The previous marketing successes in promoting tobacco use is especially ominous, considering the rapid adoption of new generation vaping paraphernalia.

The tobacco industry has a history of consistently overwhelming public health information warnings through superior marketing.

The self-reliant Marlboro Man and the engaging, masculine, cartoonish Joe Camel powerfully influenced boys and men toward tobacco use in the 70s and 80s. Yet, it was the imagery of self-reliant women, denoting themselves, through cigarette use, as modern and sophisticated, that had the greatest impact on cigarette use and consequent disease and death. Smoking would be a way to signal that, “You’ve come a long way baby!”

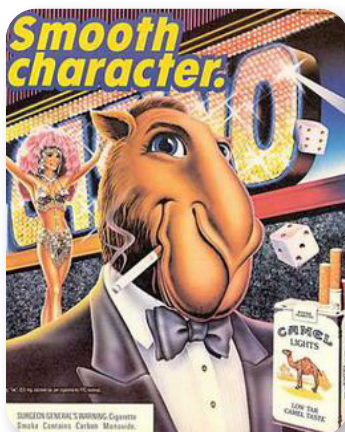
What may portend a more favorable outcome is the expressed willingness of some in the tobacco industry to discourage underage tobacco use and

to actually amend their products and marketing at the request of concerned groups. While many working in public health remain cautious and inherently skeptical, perhaps we are dealing with a more responsible tobacco industry. They likely understand that use, regulation and civil litigation are now consequences of endangering the public health.

To the extent the vaping of tobacco is used to reduce smoking, it represents a potential value; still, understanding potential risks associated with the tobacco vaping process is critical. The depressing reality of nicotine addiction and marketing acumen of the tobacco industry may represent a pending public health perfect storm.

Regarding marijuana/CBD vaping, there have been enough serious health incidents, including deaths, to warrant clear warnings relative to **any** marijuana and CBD vaping when the product comes from an illegal provider.

At this point the reality is, vaping tobacco, marijuana and CBD is established, especially among youth. Formal regulation and effective public health messaging regarding risk are necessary.



Marketing ad successes in promoting tobacco use.