



## Here Come Electronic Cigarettes, and What's Old Is New Again!

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*Meet the new boss!*

*Same as the old boss!*

– The Who, "We Won't Get Fooled Again" 1971

Fool me once, shame on you. Fool me twice, shame on me. Corporate Tobacco, still the "boss" behind all cigarettes, both new and old, wants to take us on another "snipe hunt" for the "safe cigarette." Friends, relatives, advertising models, and starlets of big and small screens, all seem to have gotten in on this latest prank. Now they bamboozle with high-tech, glamorous and suddenly-fashionable electronic cigarette "vaping." What doesn't change is the "cloud of smoke," which tobacco manufacturers blow in users' eyes while telling them lies. Only now, they call it "vapor."

I assure you, I comment here only on the makers and sellers of tobacco products, and not on those who use them. Users suffer from a condition known as nicotine addiction, whether they receive it from combustible or electronic cigarettes. They suffer at the hands of those who profit from their addiction and perpetuate the problem. These perpetrators include all of the major producers of traditional cigarettes, each of whom now also produce electronic cigarettes brands. This list includes Lorillard (Blu ECig), Reynolds Tobacco (Vuse and Zonic), Imperial Tobacco (Fontem Ventures Vapour Products) and Altria—formerly Phillip Morris (MarkTen and all other NuMark and GreenSmoke brands).

In my lifetime, I have heard more retellings of the "safer cigarette" myth by these tobacco giants than I can count. Whether menthol, filtered, low tar/nicotine, recessed filters, spit tobacco, smokeless tobacco, dissolvable tobacco, Snus, and now the electronic cigarette, promises of "harm reduction" all sound hollow. I believe none of their claims. In fact, I won't believe that these tobacco manufacturers WANT to make a safe tobacco product until they STOP selling the deadly ones! Since that has never happened, the only safe alternative is "no cigarettes."

No evidence exists to support tobacco sellers' latest claims that electronic cigarettes provide a safe and healthy alternative. To the contrary, testing by the Food and Drug Administration (FDA) in 2009 found propylene glycol, diethylene glycol, nitrosamines,



same as "evidence of absence" of harm, especially when dealing with vulnerable children and unborn babies. Cigarette manufacturers have historically thrown caution to the wind. Now that they also make electronic cigarettes, they do so still, throwing caution to fog, mist and vapor as well.

If you were to visit any of the many electronic cigarette outlets near you, you would hear almost every store clerk emphasize that THEIR nicotine solutions contain only healthy and natural ingredients. Even while perhaps admitting their nicotine solutions are made from glycols and not water, they will assure you these are exclusively "food grade glycols." By that they mean propylene glycol, which food manufacturers in fact use as a food preservative and humectant. They go on to extol the safety of "vegetable glycerin," the other predominant component.

They won't mention though that other non-food grade glycols can possibly contaminate propylene glycol, such as the diethylene glycol found by the FDA analysis of electronic cigarette vapor as I discussed above. The largest and lowest priced sources of propylene glycol and glycerin, namely as byproducts of biofuel production (such as corn ethanol-containing gasoline), contain the most contamination with toxic glycols. And, the ghastly consumer safety track record of cigarette manufacturers makes the use of unsafe but low-cost ingredients more than "possible."

More importantly, consider that "food grade" products are intended as ingredients in things to be eaten—not vaporized and inhaled. Other such additives have shown "Dr. Jekyll and Mr. Hyde" personalities, in very similar situations, i.e. safe to eat but deadly to inhale. Diacetyl, when used in artificial butter flavoring (as in many consumer foods), becomes hazardous when heated and inhaled over long periods. "Popcorn Workers Lung," an occupational pulmonary disease that emerged 15 years ago at microwave popcorn production facilities, has caused severe bronchial airway disease in hundreds of ~~A~~ employees who have inhaled otherwise safe, food-grade diacetyl. Considered safe to eat, it becomes hazardous when vaporized and inhaled over time, causing end-stage lung disease mainly in young, healthy, nonsmoking males, some of whom required lung transplants. When electronic cigarette makers call propylene glycol "food grade" to reassure users, they do so recklessly. ~~A~~

Corporate tobacco spokespersons used to resist even the idea that nicotine was addictive. But now with burgeoning electronic cigarette sales, these same tobacco reps promote their products as meeting the users' NEED for nicotine. I would like to credit them for finally understanding that "cigarette is to nicotine as syringe is to heroin." But reality says otherwise. In truth, they spin the story in the opposite direction only because they have adopted a new starting premise, one that startles with its cynicism. This professes that some people MUST have an addiction to nicotine, and that they simply provide products to satisfy this in a safer manner.

At the very least, this idea that certain people are disposable and okay to “throw away” creates a crying shame, considering that never in the history of the world have people had a better chance of finally ridding themselves of nicotine addiction—completely and FULLY. Instead, electronic cigarette manufacturers promote the opposite idea, that “certain” people (read: their customers) SHOULD remain addicted to nicotine; only use their latest products instead. Or, more likely, and all the better for them, use both their old products and their new ones; that is, do “vaping” when you can’t smoke in some venues, and then light up a cigarette on your way home. Why else would electronic cigarette manufacturers included a glowing red light at the tip of their product, made to look like a lit cigarette that brightens when the user inhales from it? Everything about the electronic cigarette is made to resemble a conventional cigarette. This reflects the manufacturer’s idea that at least SOME people SHOULD remain addicted to nicotine, using one nicotine delivery device or another; better yet, more than one.

It also took 50 years to unearth the ways that cigarette manufacturers have manipulated nicotine levels in their products, by tobacco plant horticulture that yields nicotine-enriched tobacco leaf, and chemical extraction methods such as using ammonia to “free-base” the nicotine, like making crack cocaine from powder. This shows the relentless desire of tobacco manufacturers to make the most addictive tobacco possible. Now their dreams come true in the electronic cigarette, which contains 20 mg of nicotine per cartridge. That equals the nicotine content of a full pack of cigarettes. The exact dose of nicotine the electronic cigarette user will receive depends entirely on how fast and how hard they drag from the device. Their “safer and healthier” product is simply the most extreme way yet of pumping nicotine into the brain, on demand. We learned long ago that users of filtered cigarettes, once also falsely claimed as a safer alternative, instinctively inhaled more deeply and frequently with each filtered cigarette they smoked. We should expect the same as users of electronic cigarettes find these simply fuel but never satisfy their nicotine addiction.

✱ Make no mistake; the nicotine solutions in electronic cigarettes MUST be considered as a tobacco product—the manufacturers say so themselves! The FDA had fought to regulate electronic cigarettes instead as drug delivery devices when they first arrived in the US in 2006, but the manufacturers insisted they were simply selling a new tobacco product. They fought hard and successfully in court, maintaining that because the nicotine in the devices came from tobacco plants, it qualified as a tobacco product and not a drug.

Their reason for fighting for this was obvious. They knew they could never pass the rigorous safety and effectiveness testing required by the FDA of drug delivery devices. Instead, the FDA regulates electronic cigarettes as tobacco products, now under the 2009 Family Smoking Prevention and Control Act (FSPCA). Sadly, five years have passed since this act passed, and it remains less than fully implemented. Typical of tobacco regulation acts over the years, manufacturers have found ways around all types of rules. In keeping with that theme: the 2009 Act forbade new tobacco products; the electronic

cigarette got in just “under the wire.” Imagine that? Note too, the FSPCA requires more varied and prominent warning labels on tobacco products, full disclosure of all ingredients on the label, and prevents advertising to youth. The electronic cigarette flies under this radar while the FDA struggles with bigger fish to fry.

Wanting things both ways, manufacturers who litigated the FDA to classify this as merely a “new tobacco product” want to create the illusion that it will help smokers quit using tobacco. Even a passing familiarity with the pharmacology of addiction explodes that myth. The electronic cigarette by its nature works as an addiction device, not a cessation aid. It provides a rapid burst of nicotine inhaled through the lungs where a large surface area enables the greatest absorption and delivery to the brain in the quickest time. This burst of nicotine fills the head, washes out quickly, and achieves addiction while never satisfying it. This has all the hallmarks of an addiction tool and not a cessation device. It features pharmacokinetics exactly opposite in the body from that of Nicotine Replacement Therapies (NRT) such as FDA-approved patches, gum, and lozenges.

With further twisted logic, electronic cigarette advocates have attacked the FDA studies (described above) which found harmful nicotine derivatives and carcinogens by pointing out that FDA-approved NRT can contain these, too. In doing so, they ignore that NRT only received FDA approval based on specific dose and limited duration of administration of these therapies, generally 10-12 weeks. The electronic cigarette instead administers nicotine-containing vapor ad lib by nicotine-addicted people on demand; hopefully for the rest of their lives, as far as the manufacturer cares. Then in another convulsion, electronic cigarette makers dismiss worrisome components of their vapor because the concentrations are so low, at the same time attacking far lower and shorter exposures from NRT. Tacking now like a sailboat, electronic cigarette manufacturers seem unconcerned by the enormously high concentrations of nicotine in the refill solutions, known as “juice” that they sell—high enough to literally kill on contact with the skin. They not only want things both ways, they want everything their way.

Make no mistake; nicotine is toxic *all by itself*. The tobacco plant produces nicotine as a natural pesticide to kill insects that infest it. In fact, high concentrations of nicotine were formerly used as an agricultural pesticide. Now, refill “juice” contains concentrations as high as did nicotine pesticides. Whereas a nicotine cartridge contains 20 mg, the refill bottles may contain up to 7 GRAMS of nicotine. Considering that a single 50 MILLIGRAM nicotine dose could potentially kill an adult, this means 1 refill bottle has enough nicotine to kill 140 adults. If you wonder why the manufacturers would sell such a highly concentrated and toxic solution, realize that the more concentrated the solution, the lighter the nicotine product; the lighter the nicotine product, the lower the taxes.

With the electronic cigarette, tobacco makers can exploit this important regulatory loophole. Tobacco taxes are based on the weight of tobacco they contain.

Manufacturers knew they could beat weight-based taxes with new lighter-weight, smokeless, and dissolvable tobacco products (Camel Snus, Stix, Strips, Orbs). Even better, nicotine in electronic cigarette cartridge solutions weighs even less and will shrink these tax burdens even more.

Watching the size of the vapor plume that bursts from an electronic cigarette user's mouth also seems instructive of the manufacturer's cynicism. You may wonder how such a little device can create such an impressive cumulous cloud, and why. Its tiny cartridge or miniature "tank" can't possibly hold enough fluid volume to liberate smoke-like clouds puff after puff. But recall that the cartridge solutions DO contain glycols—antifreeze—which scavenge water molecules from the air and FROM THE USER'S LUNGS, just like antifreeze does from your car's cooling system. Most of the vapor cloud, by volume, represents atmospheric and bodily water drawn by these glycols. This allows ingenious manufactures to keep the size of these vaporizers remarkably small, as small as a cigarette in fact! Plus, scavenging water from the air, as well as from the breath of the user, allows manufacturers to beat the weight-based taxes they would have to pay if they instead made their nicotine solutions with water rather than glycols. The electronic cigarette is small like a cigarette, glows like a cigarette, makes a big expressive cloud in the air like a cigarette, and best of all, keeps users addicted to nicotine, like a cigarette. Other than show, this burst of vapor serves no purpose; medical inhalers can deliver full-dose nicotine without any such cloud.

Yet, electronic cigarette purveyors deny that their products could serve as a "gateway" to use of other forms of tobacco. In fact, the electronic cigarette provides a fast track not only to all types of tobacco use, but also to worse addictions than just that. It has not taken long for unscrupulous users to realize the electronic cigarette cartridge, tube, and battery-powered heating element nicely deliver THC-containing cannabis solutions made from the marijuana plant, even in "polite company." That is, electronic weed comes without the tell-tale "burning rope" smell of non-electronic weed. And, the word on the street is that the newly smuggled "black heroin" works great in electronic cigarette cartridges. That allows needle-phobic drug adventurers to become addicted to heroin despite their fear of a syringe. Recall, nicotine is to cigarette as heroin is to syringe (or to "vaping"). Wondering what the goofy guy next to you in the bar is "vaping?" Put THAT in your pipe and smoke it, as the saying goes.

It also took 50 years after the surgeon general's report to flush out the fact that cigarette manufacturers deliberately market to and target children. In a sense, they must: if you make a product that prematurely kills your customers, you must logically replace dead customers with new recruits or go out of business. Now tobacco manufacturers can do this with electronic cigarettes, which offer kids candy and fruit flavored nicotine solutions. Electronic cigarette magazine ads follow the same cool and "glam" shtick as have traditional cigarettes. They obviously link smoking, and now "vaping," to a body-slimming benefit, which especially appeals to young people who want to resemble the starlets who now promote "vaping." Cigarette manufacturers

once used to promote the rugged and independent Marlboro Man to sell “lighting up” as symbolic of freedom of expression. Now they target fashion conscious and peer pressure-sensitive children filling their heads with a cloud of vapor to create new nicotine customers. When one promotes new ways to get a nicotine fix as a “free choice,” they clearly don’t understand the nature of addiction, in which compulsion always displaces free choice. Or perhaps they do, but cannot resist the profits they can make from exploiting it. Note that electronic cigarette makers have doubled the number of junior high school children who have used their product in the last two years.

Even a brief look at the glam marketing of electronic cigarettes shows the intent to “renormalize” smoking behavior. As always, these ads appeal to youthful, image conscious people who thirst for identity and independence. Conventional tobacco advertising has always relied on those vulnerabilities. Now electronic cigarette manufacturers envision a bright future in which their product will become the new norm, with or without combustible cigarettes. As conventional tobacco manufacturers buy more electronic cigarette manufacturing facilities and brands, this “right pocket, left pocket” revenue makes less of a difference. They profit from nicotine addiction either way.

Finally, who are these electronic cigarette manufacturers in the first place? The original electronic cigarette creators worked in China and first marketed internationally in 2002. The electronic cigarette became commonly available in the United States in 2006. Now manufactured outside of China, it appears that the product suffers from the same lack of quality control processes as had Chinese-manufactured lead-painted children's toys. The FDA laboratory analysis of 2009 found that even cartridges labeled as containing no nicotine still contained detectable nicotine, and that three different cartridges under the same label emitted markedly different amounts of nicotine with each puff. The nicotine level per puff fluctuated by nearly 100% percent Another potent nicotine cartridge delivered double the nicotine as did FDA-approved NRT, such as patches, gum, and lozenges. I suspect higher profits, not higher quality standards, lured Big Tobacco Manufacturers into buying the mom and pop electronic cigarette companies. So meet the new boss – same as the old boss; will we get fooled again?

Victims are victims, and perpetrators are perps. Promoting addiction for the sake of profit points the finger at the profiteer and not the customer. When someone who profits from tobacco, whether smoked, smokeless, dissolvable, spit, or now electronically delivered, says they now have a new, safe, and healthy product, don’t listen. I will believe they want to sell healthier products only when they have stopped selling their toxic ones.

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