

Chapter 1

Nicotine Addiction 101

That First Subtle “Aaah”

Remember how your body reacted to that first-ever inhaled puff, dip or chew of tobacco? Although some took to smoking like fish to water, what most recall is how utterly horrible it tasted.

You may have felt dizzy, nauseous or if like me, your face turned six shades of green. Your mouth may have been filled with a terrible taste with your throat on fire and lungs in full rebellion, as scores of powerful toxins assaulted, inflamed and numbed all tissues they touched.

Prior to that moment, you may have heard that tobacco could be addictive or that it could develop into a “nasty habit.” But after such an unpleasant introduction you were sure that it couldn’t possibly happen to you. How could it? If like most, you didn’t like what you just experienced. How could it become a habit? How could you possibly become addicted?

Like or dislike have surprisingly little to do with true chemical addiction. Beneath any rebellion by our body to the toxic chemical onslaught that it had just endured, our mind had just sampled and experienced an extremely powerful and longer than normal

dopamine “aaah” explosion. An enduring memory of what caused that “aaah” was created. That dopamine reward pathway memory was far more durable than the negative memory of unpleasantness that clouded its creation. It was a memory that would soon have us returning to steal more. But what is dopamine?

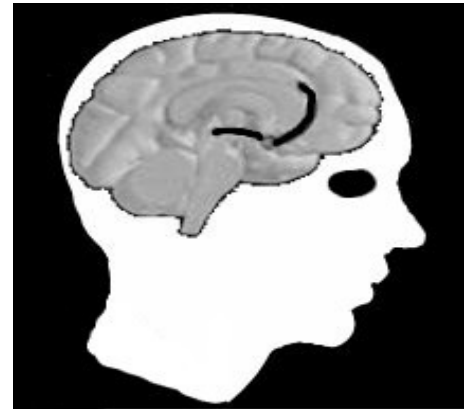
Do you remember what you felt when first praised for keeping your coloring between the



lines, spelling your name correctly or reciting your times tables? Remember the “aaah” feeling? Remember the feeling of making friends with another child or when mom gave you a big hug? “Aaah!” That was dopamine.

We had just sampled the mind’s reward for accomplishment, peer bonding or nurturing and the resulting “aaah” memory was burned into our brains. It caught our attention, taught us what is important, helping to establish future priorities and encouraging us to repeat the activity that produced the reward.

Dopamine is a neurotransmitter. It is one of many brain chemicals that allow brain cells to communicate with each other. But as it relates to drug addiction it plays a much larger role. It is the brain reward pathway neurotransmitter responsible for giving us a prize when anticipating or experiencing species survival events associated with eating, thirst quenching, accomplishment, companionship, group acceptance, sex or nurturing.⁵



Dopamine pathways are present and strikingly similar in the brains of all animals. They originate in a region of the brain known as the limbic system. It controls our drives, raw animal impulses and subconscious decisions.

Sitting atop the spinal cord at the base of the brain, dopamine “aaah” pathways were not engineered to act as some brain candy toy to idly pleasure humans and other animals. They operate as a preprogrammed survival tool that actually teaches, reinforces and prioritizes basic species survival instincts.

In addition to generating a noticeable “aaah” reward sensation, the brain records the entire event in what may be the highest definition memory (plasticity) that the mind is capable of producing. It’s what researchers call “salient” or “pay attention” memories.⁶



Yes, our “pay attention” pathways are a built-in survival training school. Both anticipatory and activity generating “aaah” events grab and hold our attention. Vivid, easy to recall recordings document the experience. But as in any classroom, there must be some form of discipline for failure to pay attention, stay focused, learn

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- 5 Stefano GB, et al, [Nicotine, alcohol and cocaine coupling to reward processes via endogenous morphine signaling: the dopamine-morphine hypothesis](#), Medical Science Monitor, June 2007, Volume 13(6), Pages RA91-102.
- 6 Kathleen McGowan, [Addiction: Pay Attention](#), Psychology Today Magazine, Nov/Dec 2004, an article reviewing the drug addiction research of Nora Volkow, Director of the National Institute of Drug Abuse.

and apply the lessons being taught. Discipline appears to be dispensed inside the mind's limbic region by the brain's right insula.

The insula receives a wide range of input from our senses, emotions and previously recorded "pay attention" memories. A 2007 study found that smokers who sustained brain damage to the right insula actually lost the urge to smoke,⁷ suggesting it may be responsible for generating nicotine use urges, craves and anxieties.

Thank goodness it doesn't take traumatic brain injury or stroke to get the insula to stop craving nicotine.

So, how does all of this relate to nicotine addiction? What would happen if, by chance, an external chemical so closely resembled the properties of the neuro-chemical responsible for activating brain dopamine pathways that once inside the brain it was capable of generating a stolen and unearned dopamine "aaah" sensation? Nicotine is such a chemical. Its polarities and structure are so similar to acetylcholine, the brain's natural chemical messenger responsible for initiating normal dopamine pathway stimulation, that it bonds to the same receptors and easily hijacks the brain's reward system.

Chemical Slavery's Onset

Drug addiction is about the brain's "pay attention" dopamine reward pathways being taken hostage by an external chemical. As previously explained, these pathways were engineered to teach and reinforce species survival priorities associated with food, water, nurturing, accomplishment and reproduction. Enter nicotine, what some researchers consider the most perfectly designed drug of addiction."

We nicotine smokers didn't suck tissue destroying tars that included ammonia, formaldehyde, arsenic, butane, hydrogen cyanide, lead, mercury, vinyl chloride, methane



⁷ Naqvi, NH, et al, [Damage to Insula Disrupts Addiction to Cigarette Smoking](#), Science, January 2007, Vol. 315 (5811), Pages 531-534.

or vast quantities of carbon monoxide into our bodies because we wanted to watch each puff destroy a bit more of our capacity to receive and circulate life-giving oxygen. We did so to replenish rapidly falling nicotine reserves.

Nicotine not only fosters dopamine flow by crossing the blood-brain barrier and docking with a4b2-type acetylcholine receptors, it somehow turns off a key killjoy enzyme that prevents normal dopamine clean up. This combination of events results in a powerful "aaah" sensation within seconds of a puff that lingers far longer than would a normal dopamine reward. Think about how short-lived the "aaah" sensation is following a bite of your favorite food.

The need to replenish one's nicotine supply gets recorded in what may be the highest definition memory the mind can produce. Our mind is essentially told, "Hey, pay attention to this!"⁸ Continued nicotine use causes these extremely salient memories to quickly pile up. They soon begin burying all remaining memory of life without it. We quickly "forget" that it was ever possible to function without it.

Our rewarded and punished mind was left totally yet falsely convinced that nicotine use was essential for survival, that it defines who we are, gives us our edge, helps us to cope, and that life without it would be horrible or even meaningless. Rewarded by dopamine and punished by an endless need for more nicotine, we quickly grew to believe that we could not function comfortably without it.

Why can't you starve yourself to death? Have you ever thought about it? Not only are we rewarded with dopamine "aaah" sensations when we anticipate eating or actually do so, we are punished with anxieties and hunger pains when we wait too long between feedings.

Yes, what goes up must come down. As our body slowly metabolized and rid itself of the nicotine we introduced via our method of delivery, we gradually experienced increasing mood deterioration and escalating distress, punctuated by insula driven anxiety, depression and anger. We each endured greater extremes in daily mood swings than non-users, and the greater our dependency the more unstable our moods.⁹

Our hijacked brain quickly became fooled into believing that bringing a new supply of nicotine into the bloodstream was every bit as important as eating. Nicotine cravings became as real as food cravings. Nicotine "aaah"s became as important as food "aaah"s. Nearly indistinguishable, we experienced the same anxiety beatings, the same dopamine rewards.

8 McGowan, K, [Addiction: Pay Attention](#), Psychology Today Magazine, Nov/Dec 2004, Article ID: 3571; also see, Rosack, J, [Volkow May Have Uncovered Answer to Addiction Riddle](#), Psychiatric News June 4, 2004, Volume 39 Number 11, Page 32.

9 Parrott AC, [Cigarette-derived nicotine is not a medicine](#), The World Journal of Biological Psychiatry, April 2003, Volume 4(2), Pages 49-55.

Without food we starve to death. Without nicotine we thrive. But survival instinct pathways taken hostage by an external chemical are incapable of distinguishing fact from fiction. Truth quickly became a casualty of the mission and function of our “pay attention” circuitry.

Do you remember the calm and quiet mind you once called home? Remember going days, weeks and months without once craving nicotine? Do you remember not needing it at all? Would coming home, to this calm, quiet, yet forgotten mind be a good thing or bad?

However, for the enslaved mind, any attempt to stop using nicotine is met with a rising tide of anxieties. Soon, old nicotine use “aaah” memories that fill our brain memory banks begin looking like life jackets. Instead of staying afloat for the up to three days needed to navigate the roughest seas and see the emotional storms at last peak in intensity, hungry for calm, in the mind of a nicotine addict the instant and obvious solution is to take the hook and bite on old “aaah” memory bait. We seek and find relief in the exact manner our addiction conditioned us to generate relief. We reach for the very thing from which only hours or days ago we were trying to flee. We reach for nicotine.

As illogical as it may sound, we convince ourselves that we can succeed if we just have a little now, that we can stop using nicotine by using it. We sell ourselves on the belief that this is our reward for having briefly succeeded in going without.

This quick fix isn't a solution at all. It is a guarantee of continuing bondage within a cycle of nicotine-dopamine highs and lows, a lower-intensity storm that's never ending.

If an underlying current of physical withdrawal anxieties isn't sufficient to get us to bite, we face the conditioned consequences of years of nicotine feedings that involved replenishment patterns that did not go unnoticed by the subconscious mind.

Our subconscious became conditioned to associate various activities, locations, times, people and emotions with using nicotine. It learned to expect arrival of a new supply of nicotine in specific situations or under specific circumstances. Insula driven urges, craves and anxieties alert us when a conditioned use situation is encountered. Normally the urge is so subtle it goes unnoticed but we reach for nicotine to satisfy it nonetheless.

This classical conditioning bell, like that which Pavlov used to teach his dogs to expect food and begin salivating, must now be un-rung. We must extinguish the flame of each established feeding cue that we lit through association. But encountering a feeding cue during a time when brain nicotine reserves are at or near depletion can trigger a brief yet powerful anxiety episode. While seemingly unmanageable, and while recovery time distortion can make minutes feel like hours, the episode will last less than three minutes and is entirely manageable, as detailed in Chapter 11. Contrary to what we then feel, those three minutes are extremely short lived in comparison to a life of addiction.

Nicotine addiction is about living a life of lies, deceit and denial. Forgetting the amazingly calm and quiet mind we once called home our "pay attention" pathways were fooled into establishing a new number one priority in life, obtaining that next fix. We are drug addicts in the truest sense.

We may forget to take our vitamin or medicine, procrastinate regarding work, skip meals, miss-out on time with family, friends or romance, but we would not forget or fail to respond to the bell for our next nicotine feeding.

Knowledge is key in our quest to return home. Knowledge, some form of ongoing support and an appreciation of the truth that just one powerful hit of nicotine all but assures relapse. Like an alcoholic pretending they can have "just one sip," toying with true chemical addiction as though it were some "nasty little habit" is a recipe for relapse.

As you're about to learn, there is only one rule that governs recovery. We call it the "Law of Addiction." Break the law and you lay to waste all of your effort and dreams of a life free of nicotine. Abide by it and failure becomes impossible. Knowledge is power!

Tolerance

Definitions of tolerance include:

1. Decreased responsiveness to a stimulus, especially over a period of continued exposure
2. The capacity to absorb a drug continuously or in large doses without adverse effect
3. Diminution in the response to a drug after prolonged use, or
4. Physiological resistance to a poison.¹⁰

The brain attempts to fight back against its toxic intruder. As if it somehow knows that too much dopamine is flowing, it attempts to diminish the influence of nicotine by more widely disbursing it. It does so by growing or activating millions of extra nicotinic-type acetylcholine receptors in as many as eleven different brain regions.¹¹

Although the average user's body depletes and eliminates (metabolizes) nicotine at the rate of roughly one-half every two hours (129 minutes in Caucasians and 134 minutes in African Americans), the average nicotine intake per cigarette varies significantly. Findings indicate that average intake per cigarette is 30% greater in African Americans at 1.41

¹⁰ [tolerance](#). (n.d.). The American Heritage® Stedman's Medical Dictionary. Retrieved September 14, 2008, from Dictionary.com website: <http://dictionary.reference.com/browse/tolerance>

¹¹ Mugnaini M et al, [Upregulation of \[3H\]methyllycaconitine binding sites following continuous infusion of nicotine, without changes of alpha7 or alpha6 subunit mRNA: an autoradiography and in situ hybridization study in rat brain](#), The European Journal of Neuroscience, November 2002, Volume 16, Pages 1633-1646.

milligrams per cigarette than for Caucasians at 1.09 milligrams per cigarette.¹²

Tolerance ever so gradually pulls us deeper and deeper into dependency's forest. We find ourselves sucking a wee bit harder, holding the smoke longer, or smoking more nicotine in order to achieve the desired effect. Two a day, three, four, four smoked hard, our brains gradually grow additional nicotinic-type acetylcholine receptors. Over time, most of us require more nicotine in order to match last month's or last year's "aaah" reward sensation.

My "aaah"s were no more powerful smoking five cigarettes a day at age fifteen than when smoking 60 per day at age forty. I needed that much more in order to achieve the same remembered effect.

I know, you're probably thinking, you've been at the same nicotine intake level for some time now and it's likely vastly less than the three packs-a-day I was smoking. While we don't yet fully understand wide variations in levels of nicotine use, we know that genetics probably explains most differences.¹³

There is also the fact that some of our mothers, like mine, smoked during pregnancy. I was born with my brain wired for nicotine. I came into this world as nicotine's slave and likely spent the first few days in withdrawal.¹⁴ As Duke University's Professor Slotkin puts it, "nicotine alters the developmental trajectory of acetylcholine systems in the immature brain, with vulnerability extending from fetal stages through adolescence."¹⁵

For me, those first few cigarettes at age 15 were not about initial addiction, they were about relapse to a condition my brain had known since those very first developing acetylcholine receptors were attacked by nicotine, assaults which commenced three to four weeks following conception.¹⁶

In addition to genetics and prenatal nicotine exposure, the younger we were when we started smoking, the more damage nicotine inflicted upon our still developing brains. Research suggests that damage to dopamine and serotonin pathways is significantly greater in males than females, a female advantage that disappears if the female brain is exposed to both prenatal and adolescent nicotine.¹⁷

12 Pérez-Stable EJ et al, [Nicotine metabolism and intake in black and white smokers](#), Journal of the American Medical Association, July 1998, Volume 280(2), Pages 152-156.

13 Berrettini W, et al, [Alpha-5/alpha-3 nicotinic receptor subunit alleles increase risk for heavy smoking](#), Molecular Psychiatry, April 2008, Volume 13(4), Pages 368-373.

14 Law KL, et al, [Smoking during pregnancy and newborn neurobehavior](#), Pediatrics, June 2003, Volume 111(6 Pt 1): Pages 1318-1323.

15 Slotkin TA, et al, [Adolescent nicotine treatment changes the response of acetylcholine systems to subsequent nicotine administration in adulthood](#), Brain Research Bulletin, May 15, 2008, Volume 76 (1-2), Pages 152-165.

16 Slotkin TA, [If nicotine is a developmental neurotoxicant in animal studies, dare we recommend nicotine replacement therapy in pregnant women and adolescents?](#) Neurotoxicology and Teratology, January 2008, Volume 30, Issue 1, Pages 1-19.

17 Jacobsen LK, et al, [Gender-specific effects of prenatal and adolescent exposure to tobacco smoke on auditory and visual attention](#), Neuropsychopharmacology, December 2007, Volume 32(12); Pages 2453-2464.

The bottom line is that being a “little bit addicted” is like being a “little bit pregnant.” While normal for light smokers to rationalize that they are somehow superior or better able to control their addiction than heavy smokers, in reality their slavery is just as permanent and just as real. They often find ending nicotine use just as difficult as I did, despite the significant difference in nicotine intake.

When combined with genetic factors, differing toxin and carcinogen types and concentrations in different brands of tobacco, environmental factors that subject us to other chemical agents (employment, hobbies, water and air), and how intensely each cigarette is smoked, the smoker smoking five times a day may face health risks just as great or greater than heavier smokers.

Over the years I met many smokers, myself included, who experienced a significant increase in their level of smoking and nicotine tolerance following a relapse after a cessation attempt. We required greater nicotine intake. Smoking more cigarettes harder, it was almost like binge eating after dieting, as if the brain was trying to make up for missed nicotine feedings. But seeing increases in smoking following relapse is today far less common.

Like a hurricane needing warm water in order to strengthen, the fuel for tolerance is additional time and opportunities to use nicotine. As you may already be aware, the smoke-free indoor-air movement is gradually sweeping the globe. Smoking is also increasingly being prohibited in parks, playgrounds, on beaches and in the presence of children. Non-smokers are increasing less tolerant of smoking in their presence, homes or vehicles. Faced with fewer replenishment opportunities, brain tolerance changes will increasingly be associated with trying to obtain additional nicotine by smoking fewer cigarettes more intensely.

The reverse is often seen in smokers transferring their dependency to oral tobacco or NRT products, where around-the-clock use becomes possible. “I started out with about 6 pieces a day and now chew about 15 pieces of 2mg per day. Probably more nicotine than when I smoked,” asserts a 48 year-old, three-year female gum user. “There is one in my mouth 24 hours a day, 7 days a week ... yes for real,” claims a 32 year-old, three-year male gum user who chews 40-50 pieces a day and thinks he may “chew more than anyone in the world.”¹⁸

Regardless of method of delivery or level of nicotine tolerance, the millions of extra nicotinic-type acetylcholine receptors grown by the addicted brain de-sensitized it to its natural sense of neuro-chemical normal. We were rewired to function with a precise amount of nicotine in our blood stream and lived the reality of “nicotine normal” that we created. Any attempt to stop using it brought potential for a brief emotional train wreck, as we found ourselves not only de-sensitized to nicotine but to life as well.

18 Polito JR, [Long-Term Nicorette Gum Users Losing Hair and Teeth](#), WhyQuit.com, December 1, 2008.

The brain makes substantial progress in reversing tolerance-induced de-sensitivities within 72 hours of ending all nicotine use. Withdrawal anxieties will peak, begin to diminish and the worst will be behind you.

But although the brain gradually restores natural sensitivities, somehow tolerance's wiring paths become permanently etched into our brains. Although we can arrest our chemical dependency, we cannot cure, permanently eliminate or destroy it. We each remain wired for relapse for life. It's why nicotine dependency recovery is an all or nothing proposition. Just one powerful puff, dip or chew of nicotine and we will find our brain again begging for more. While this may seem like a curse it gradually becomes our biggest peace of mind. Once confident of victory, we know exactly what it takes to stay free.

Whether the brain's current daily level of tolerance is one nicotine fix or twenty does not alter its status as slave.

So what is this chemical, nicotine, that ruled our lives for so long?

Nicotine

I was surprised to learn that all nicotine comes from the tobacco plant, including nicotine in nicotine replacement products such as the patch, gum and lozenge. Nicotine is not created in the laboratory. The pharmaceutical industry competes with the tobacco industry in purchasing tobacco from tobacco farmers.

Nicotine is a colorless, odorless, liquid organic-based alkaloid in the same family as cocaine, morphine, quinine and strychnine. It slowly yellows when exposed to air, is bitter tasting and gives off a slight fishy odor when warmed.¹⁹

When holding dry tobacco in your hand, the weight of nicotine within it will vary depending upon the type of tobacco. While nicotine's weight averages about 3% in cigarettes²⁰ and moist snuff, it comprises 1.6% of a tobacco plug's weight and about 1% of the weight of chewing tobacco.²¹



19 Cornell University, [Nicotine \(Black Leaf 40\) Chemical Profile](#), April 1985.

20 Blakely T et al, [New Zealand Public Health Report on Nicotine](#), May 27, 1997.

21 Tilashalski, K et al, [Assessing the Nicotine Content of Smokeless Tobacco Products](#), Journal of the American Dental Association, May 1994, Volume 125, Pages 590-594.

One of the most toxic of all poisons,²² nicotine is a fetal teratogen that damages the developing brain.²³ A natural insecticide formed in the roots of the tobacco plant, it helps protect the plant's roots, stalk and leaves from being eaten by insects and animals. It was sold as an alkaloid insecticide in America under the brand name Black Leaf 40, a mixture that was 40% nicotine sulfate.²⁴ Today nicotine is touted in organic gardening as a means for killing insects.

How deadly is nicotine? It's nearly twice as deadly as black widow spider venom (.5 mg/kg versus .9mg/kg) and at least three times deadlier than diamondback rattlesnake venom (.5 mg/kg versus [1.89mg/kg](#)).

LD50 is an abbreviation for the lethal dose of a toxic chemical. It represents the amount of the chemical needed to kill 50% of humans weighing 160 pounds. Nicotine's minimum adult LD50 is 30mg (milligrams) and if in ingested in liquid form death could occur within 5 minutes.²⁵

Drop for drop, that makes nicotine as deadly as strychnine, which also has a minimum adult LD50 of 30mg,²⁶ and more deadly than arsenic (50mg),²⁷ or cyanide (50mg).²⁸

Nicotine kills by eventually paralyzing breathing muscles. Prior to death, symptoms include salivation, nausea, vomiting, abdominal pain, diarrhea, dizziness, weakness, confusion progressing to convulsions, hypertension and coma.²⁹

Although the average American cigarette contains 8 to 9 milligrams of nicotine,³⁰ some is burned, some escapes through cigarette ventilation and the filter traps some. The lungs absorb nearly 90% of inhaled nicotine.³¹ It results in the average smoker introducing 1.17 to 1.37 milligrams of nicotine into their bloodstream with each cigarette smoked.³² Average intake can vary significantly from smoker to smoker, ranging from 0.3 to 3.2 mg of nicotine

22 de Landoni, JH, [Nicotine](#), IPSC INCHEM, March 1991.

23 Roy TS, et al, [Nicotine evokes cell death in embryonic rat brain during neurulation](#), The Journal of Pharmacology and Experimental Therapeutics, December 1998, Volume 287(3), Pages 1136-1144.

24 Cornell University, [nicotine \(Black Leaf 40\) Chemical Profile](#), Pesticide Management Education Program (PMEP), April 1985.

25 Cornell University, [Nicotine \(Black Leaf 40\) Chemical Profile](#), April 1985.

26 Borges, A et al, [Strychnine](#) (PIM 507), March 1989, IPSC INCHEM.

27 Benedetti, JL, [Arsenic](#) (PIM G042), July 1996, IPSC INCHEM.

28 van Heijst, ANP, [Cyanides](#) (PIM G003), February 1988, IPSC INCHEM.

29 de Landoni, JH, [Nicotine](#) (PIM 373), March 1991, IPSC INCHEM.

30 Benowitz NL, et al, [Establishing a nicotine threshold for addiction. The implications for tobacco regulation](#), New England Journal of Medicine, July 14, 1994, Volume 331(2), Pages 123-125.

31 Philip Morris, Memorandum, [Media Presentation - Draft Outline](#), April 7, 1998, Bates Number: 2064334296.

32 Jarvis MJ, et al, [Nicotine yield from machine-smoked cigarettes and nicotine intakes in smokers: evidence from a representative population survey](#), Journal of the National Cancer Institute, January 17, 2001, Volume 93(2), Pages 134-138.

per cigarette.³³

Picture the largest rat you have ever seen. It would weigh about a pound. The 1mg of nicotine that entered your bloodstream from your last nicotine fix would be sufficient to kill that rat.

A smoker smoking 30 cigarettes per day is, over an entire day, bringing enough nicotine into their body to have killed a 160-pound human if the entire 30mg had arrived all at once. Two to three drops of nicotine in the palm of the hand of someone weighing 160 pounds or less and he or she is dead.

Those pushing a growing array of nicotine products often falsely assert that they are as safe as caffeine. Don't believe it. Nicotine is at least 166 times more toxic than caffeine. Caffeine's lethal dose is 10 grams or 10,000 milligrams compared to 30mg for nicotine.

Picture a substance more toxic than rattlesnake or black widow venom being fed to your brain day after day after day. Is it any wonder that a 2004 study using brain MRI imaging found that "smokers had smaller gray matter volumes and lower gray matter densities than nonsmokers?"³⁴ Contrary to findings from studies examining the short-term (acute) effects of nicotine,³⁵ studies of the long-term (chronic) effects of smoking nicotine report decline and impairment of attention, concentration, and the accuracy of working and verbal memory.³⁶

Visualize nicotine's neuro-toxic effects upon the human brain slowly destroying it,³⁷ while damaging what remains.³⁸ Possibly the most frightening of all the risks posed by our addiction is its ability to destroy all memory of why this journey home is important. Think hard. Try to remember what it was like to go weeks and months without once craving nicotine. Those pre-addiction memories are gone, aren't they! Now, even the thought of going without nicotine may be sufficient to generate anxiety.

As for those selling a growing array of nicotine products, their marketing ploys and the research backing their sales pitch will always micro-focus upon the effects of just a few of

33 Benowitz NL, et al, [Establishing a nicotine threshold for addiction. The implications for tobacco regulation](#), New England Journal of Medicine, July 14, 1994, Volume 331(2), Pages 123-125.

34 Brody, AL et al, [Differences between smokers and nonsmokers in regional gray matter volumes and densities](#), Biological Psychiatry, January 1, 2004, Volume 55(1), Pages 77-84.

35 Jubelt LE, et al, [Effects of transdermal nicotine on episodic memory in non-smokers with and without schizophrenia](#), Psychopharmacology, July 2008, Volume 199(1), Pages 89-98.

36 Jacobsen LK, et al, [Effects of smoking and smoking abstinence on cognition in adolescent tobacco smokers](#), Biological Psychiatry, January 1, 2005, Volume 57(1), Pages 56-66; also see also see Counotte DS, et al, [Long-Lasting Cognitive Deficits Resulting from Adolescent Nicotine Exposure in Rats](#), Neuropsychopharmacology, June 25, 2008 [Epub ahead of print]; also see,

37 Gallinat J, et al, [Abnormal hippocampal neurochemistry in smokers: evidence from proton magnetic resonance spectroscopy at 3 T](#), Journal of Clinical Psychopharmacology, February 2007, Volume 27(1), Pages 80-84.

38 Gallinat, J, et al, [Smoking and structural brain deficits: a volumetric MR investigation](#), European Journal of Neuroscience, September 2006, Vol. 24, pp. 1744-1750.

the more than 200 neuro-chemicals that nicotine controls (usually the stimulants), while ignoring the big picture. Their goal is to make money by selling us nicotine, not to free us from requiring it. Their marketing will never attempt to value the loss of personal freedom to chemical addiction, nor discuss, in a fair and honest manner, the harms inflicted by nicotine upon those addicted to it.

Do you know of any alcoholic rehabilitation program that recommends switching from whiskey to pure alcohol and then slowly weaning yourself off alcohol over a period of 90 days? Who benefits from such a treatment method when it takes just 3 days to rid the body of all nicotine and experience true healing in full bloom?

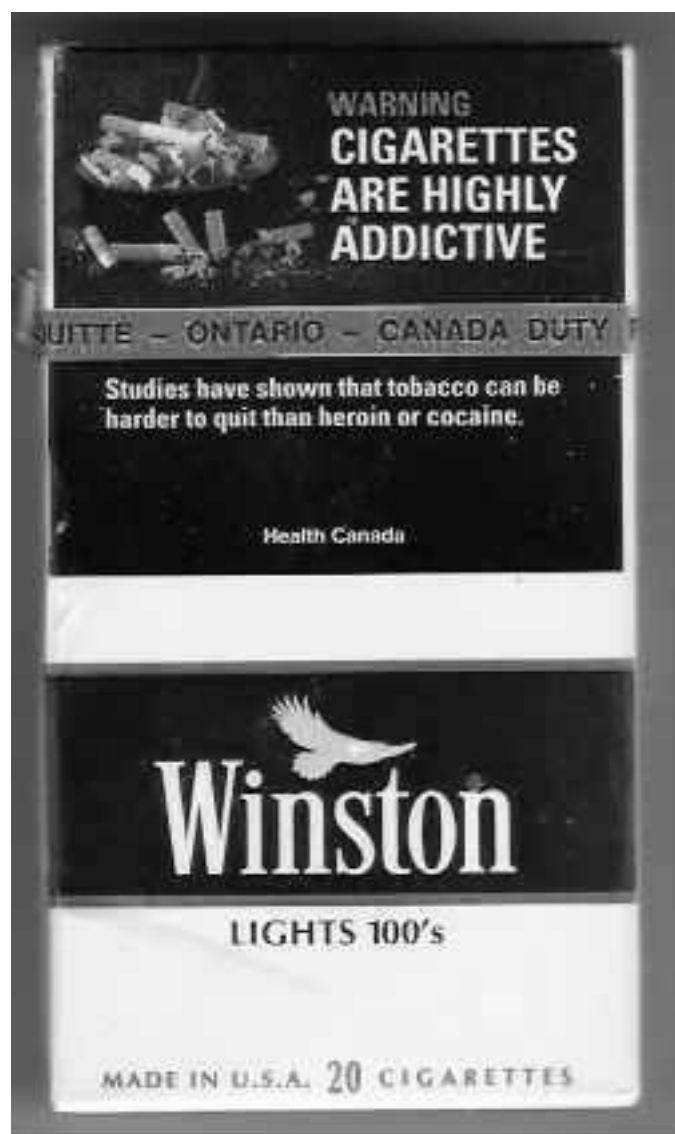
As Addictive as Heroin?

On May 17, 1988 the U.S. Surgeon General warned that nicotine was as addictive as heroin and cocaine.³⁹

Canada's cigarette pack addition warning label reads, "WARNING - CIGARETTES ARE HIGHLY ADDICTIVE - Studies have shown that tobacco can be harder to quit than heroin or cocaine."

But how on earth can nicotine possibly be as addictive as heroin? It is a legal product, sold legally in the presence of children, near candies, sodas, pastries and chips at neighborhood convenience stores, and behind the counter at the corner drug store, supermarket or gas station.

Heroin addicts describe their dopamine high as accompanied by a numb sensation, while the methamphetamine or speed addict's dopamine high is fast or racing. The alcoholic's comes with drunkenness and the cocaine addict's is euphoric.



The common effect among drugs of addiction is their ability to stimulate dopamine pathways

³⁹ [The Health Consequences of Smoking: Nicotine Addiction](#): A Report of the Surgeon General, May 17, 1988.

inside the brain. But the fact that a nicotine dopamine high allows us to remain fully alert, functioning yet have our nervous system stimulated, blinds most of us from making connections and associations with those addicted to illegal chemicals. Coupled with the fact that nicotine is legal and easily accessible enables us to live in denial of what we must now recognize and accept, that we too are drug addicts.

Definitions of nicotine dependency vary greatly. One of the most widely accepted is the American Psychiatric Association's as published in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM IV).⁴⁰ Under DSM IV, a person is dependent upon nicotine if at least 3 of the following 7 criteria are met:

1. Difficulty controlling nicotine use or unable to stop using it.
2. Using nicotine more often than intended.
3. Spending significant time using nicotine (note: a pack-a-day smoker spending 5 minutes per cigarette devotes 1.5 hours per day, 10.5 hours per week or 13.6 forty-hour work weeks per year to smoking nicotine).
4. Avoiding activities because they might interfere with nicotine use or cutting activities short so as to enable replenishment.
5. Nicotine use despite knowledge of the harms tobacco is inflicting upon your body.
6. Withdrawal when attempting to end nicotine use.
7. Tolerance - over the years gradually needing more nicotine in order to achieve the same desired effect.

A 2008 study found that 98% of chronic smokers have difficulty controlling use.⁴¹ Although often criticized, the problem with DSM nicotine dependency standards is not its seven factors but getting those hooked upon nicotine to be honest and accurate in describing its impact upon their life.

It isn't unusual for the enslaved and rationalizing mind to see leaving those we love in order to use nicotine as punctuating life not interrupting it. The captive mind can invent a host of excuses for avoidance of activities lasting longer than a couple of hours. It can explain how the ashtray sitting before them became filled and their cigarette pack became empty without them realizing it was happening.

In February 2008 I finished presenting 63 nicotine cessation seminars in 28 South Carolina prisons that had recently banned all tobacco. Imagine paying \$8 for a hand-rolled cigarette filled with tobacco from roadside cigarette butts, tobacco now wrapped in paper torn from a prison bible. In medium and maximum-security prisons \$8 per cigarette was pretty much the norm, with the price dropping to about \$2 in less secure pre-release facilities. Imagine not

40 American Psychiatric Association, [Diagnostic and Statistical Manual of Mental Disorders, 4th edition](#), Washington, D.C. 1994.

41 Hendricks, P. et al, [Evaluating the validities of different DSM-IV-based conceptual constructs of tobacco dependence](#), *Addiction*, July 2008, Volume 103, Pages 1215-1223.

having \$8. I heard horrific stories about the lengths inmates go for a nicotine fix. Some will do anything.

Two inmates housed in a smoke-free prison near Johnson City, Tennessee ended a six-hour standoff in February 2007 when they traded their hostage, a correctional officer, for cigarettes. According to a prison official, "They got them some cigarettes, they smoked them and went back to their cell and locked themselves back in."

I've stood before thousands of inmates whose chemical addictions to illegal drugs landed them behind bars. During each program I couldn't help but comment on the irony that those caught using illegal drugs found their way to prison, while we nicotine addicts openly and legally purchase our drug at neighborhood stores. The irony is that, according to the CDC, during 1998 tobacco killed 25 times more Americans than all illegal drugs combined (418,690 versus 16,926).

As discussed in the introduction, Joel Spitzer may well be the world's most insightful nicotine cessation educator. My mentor since January 2000, he tells the story of how during a 2001 two-week stop smoking clinic a participant related that he was briefly tempted while in a men's bathroom after finding a single cigarette, that was his brand, and a lighter, sitting on top of a urinal. He thought to himself how easy it would have been to smoke it. Joel then asked the man, "When was the last time you ever saw anything else atop a urinal in a men's room that you felt tempted to put in your mouth?" At that the man smiled and said, "Point well taken."

Over the years, ex-users have shared stories of leaving hospital rooms where loved ones lay dying of lung cancer so they could smoke, of smoking while pregnant, of lighting their car, clothing, hair or dog afire, of smoking while battling pneumonia and sneaking from their hospital room into the staircase to light-up while dragging along the stand holding their intravenous medication bag. Another story by Joel shares a clinic participant's long kept secret of how still smoldering cigarette butt on the floor burned the bride's wedding dress.

My own dependency admissions are horrible. I went to sea on a 72-day underwater submarine deployment in 1976 thinking that if I didn't bring any cigarettes or money along that stopping would be a breeze. I was horribly wrong. I spent two solid months begging, bumming and digging through ashtray after ashtray in search of long butts.

Even worse was losing both of my dogs to cancer. One of them, Billy, died at age five of lymphoma. It wasn't until after breaking free that I read studies suggesting that smoke from my cigarettes may have contributed to their early deaths.⁴² If so, all this now recovered

42 Roza MR, et al, [The dog as a passive smoker: effects of exposure to environmental cigarette smoke on domestic dogs](#), Nicotine and Tobacco Research, November 2007, Volume 9(11), Pages 1171-1176; also see, Bertone ER, [Environmental tobacco smoke and risk of malignant lymphoma in pet cats](#), American Journal of Epidemiology, 2003, Volume 156 (3), Pages 268-273; also Brazell RS et al, [Plasma nicotine and cotinine in tobacco smoke exposed beagle dogs](#), Toxicology and Applied Pharmacology, 1984, Volume 73, Pages 152–158, also Bertone-Johnson ER et al, [Environmental tobacco](#)

addict can do is keep them alive in his heart while begging forgiveness.

Again, the primary difference between the illegal drug addict and us is that our chemical is legal and our dopamine high was accompanied by alertness. Yes, there are social smokers called “chippers” who, probably in large part due to genetics,⁴³ will never lose the ability and autonomy to simply turn and walk away, to take it or leave it. But I am clearly not one of them and odds are, neither is anyone looking for information on how to get off of nicotine.

I often think about the alcoholic’s plight in having to watch 90% of drinkers do something the 10% who are alcoholics cannot do; control their alcohol intake. Nicotine’s dependency rate situation is almost the exact opposite. Roughly 90% of daily adult smokers are chemically dependent under DSM-III⁴⁴ standards, while 87% of students smoking at least 1 cigarette daily were found dependent under DSM-IV standards.⁴⁵

Addiction Not News to the Tobacco Industry

Nearly 50 million pages of once secret tobacco industry documents are today freely available and fully searchable online.⁴⁶ Collectively they paint a disturbing picture of an industry fully aware that its business is drug addiction.

The industry cannot ignore that historically, roughly 27% of new smokers have been age 13 or younger, 60% age 15 or under, 80% age 17 or younger and 92% under the age of 19.⁴⁷ Contrary to “corporate responsibility” image campaigns, with nearly five million annual tobacco related deaths worldwide,⁴⁸ the industry knows it must entice each new generation of youth to experiment and get hooked on nicotine or face financial ruin. As a Lorillard executive wrote in 1978, “The base of our business is the high-school student.”⁴⁹

Philip Morris USA (PM) is America’s largest tobacco company, holding a 51% share of the 70 billion dollar U.S. cigarette market in 2007.⁵⁰ Based in Richmond, Virginia and founded in 1854, PM brands include Alpine, Basic, Benson & Hedges, Bristol, Cambridge, Chesterfield, Commander, Dave’s, English Ovals, L&M, Lark, Merit, Parliament, Players, Saratoga and Virginia Slims.

[smoke and canine urinary cotinine level](#), Environmental Research, March 2008, Volume 106(3), Pages 361-364.

43 Kendler KS, et al, [A population-based twin study in women of smoking initiation and nicotine dependence](#), Psychological Medicine, March 1999, Volume 29(2), Pages 299-308.

44 Hughes, JR, et al, [Prevalence of tobacco dependence and withdrawal](#), American Journal of Psychiatry, February 1987, Volume 144(2), Pages 205-208.

45 Kandel D, et al, [On the Measurement of Nicotine Dependence in Adolescence](#): Comparisons of the mFTQ and a DSM-IV Based Scale, Journal of Pediatric Psychology, June 2005, Volume 30(4), Pages 319-332.

46 Legacy Tobacco Documents Library, University of California, San Francisco, <http://legacy.library.ucsf.edu/>; also see TobaccoDocuments.org at <http://tobaccodocuments.org>

47 Polito, JR, [WhyQuit’s Smoking Initiation Survey](#), June 3, 2005, www.WhyQuit.com

48 World Health Organization. [WHO report on the global tobacco epidemic, 2008](#), Geneva, Switzerland: World Health Organization; 2008.

49 Lorillard, [Memo](#), August 30, 1978, Bates Number: 94671153; <http://legacy.library.ucsf.edu/tid/nlt13c00>.

50 Philip Morris USA, [Financial Information](#), September 2008, <http://www.philipmorrisusa.com>

Today the Philip Morris Internet website openly proclaims, “PM USA agrees with the overwhelming medical and scientific consensus that cigarette smoking is addictive” and “smokeless tobacco products are addictive.”⁵¹

Do you remember that fateful “what the heck” moment when you surrendered and gave tobacco that first serious try? What you probably don’t recall are the thousands of invitations to surrender and experiment that tobacco industry marketing had by then burned into your subconscious mind. As shown by the following quotes from once secret Philip Morris corporate documents, while pounding your brain with those invitations it was fully aware that it was in the drug addiction business.

1972 - “The cigarette should not be construed as a product but a package. The product is nicotine. Think of a puff of smoke as the vehicle for nicotine. The cigarette is but one of many package layers. There is the carton, which contains the pack, which contains the cigarette, which contains the smoke. The smoke is the final package. The smokers must strip off all these package layers to get to that which he seeks.”⁵²

May 1975 - “... decline in Marlboro’s growth rate is due to ... slower growth in the number of 15-19 year-olds ... changing brand preferences among younger smokers.

Most of these studies have been restricted to people age 18 and over, but my own data, which includes younger teenagers, shows even higher Marlboro market penetration among 15-17 year-olds. The teenage years are also important because those are the years during which most smokers begin to smoke, the years in which initial brand selections are made, and the period in the life-cycle in which conformity to peer-group norms is greatest.⁵³



November 1977 - “I was amazed at the trend that the [Council for Tobacco Research] work is taking. For openers, Dr. Donald H. Ford, a new staff member, makes the following quotes: ‘Opiates and nicotine may be similar in action’ ... ‘There is a

51 Philip Morris USA, [Products](http://www.philipmorrisusa.com), June 2008, <http://www.philipmorrisusa.com>

52 Philip Morris Research Center, William L. Dunn, Jr., [Confidential: Motives and Incentives in Cigarette Smoking](http://legacy.library.ucsf.edu/tid/txy74e00), 1972, Bates Number: 2024273959; <http://legacy.library.ucsf.edu/tid/txy74e00>.

53 Philip Morris U.S.A. memo: [The Decline in the Rate of Growth of Marlboro Red](http://legacy.library.ucsf.edu/tid/srs84a00), May 21, 1975, Bates Number: 2077864755; <http://legacy.library.ucsf.edu/tid/srs84a00>.

relationship between nicotine and the opiates.’ ... It is my strong feeling that with the progress that has been claimed, we are in the process of digging our own grave.”⁵⁴

Based in Winston-Salem, North Carolina, R.J. Reynolds’ Tobacco Company (RJR) has been around since 1874. Prior to its 2004 merger with Brown and Williamson, its cigarette brands included Camel, Doral, Eclipse, Monarch, More, Now, Salem, Vantage and Winston.

While RJR cigarette store marketing screams suggestions that smokers smoke its brands for a host of reasons (flavor, pleasure, adventure, price, to be true, make new friends, have fun, great menthol, or to look more adult), its once secret documents tell a different story.

A nine page 1972 confidential memo by a senior RJR executive is entitled “The Nature of the Tobacco Business and the Crucial Role of Nicotine Therein.”⁵⁵ The next seven paragraphs share direct quotes from this now famous and extremely informative memo.

“In a sense, the tobacco industry may be thought of as being a specialized, highly ritualized and stylized segment of the pharmaceutical industry. Tobacco products, uniquely, contain and deliver nicotine, a potent drug with a variety of physiological effects.”

“His choice of product and pattern of usage are primarily determined by his individual nicotine dosage requirements and secondarily by a variety of other considerations including flavor and irritancy of the product, social patterns and needs, physical and manipulative gratifications, convenience, cost, health considerations, and the like.”
 “Thus a tobacco product is, in essence, a vehicle for delivery of nicotine, designed to deliver the nicotine in a generally acceptable and attractive form. Our Industry is then based upon design, manufacture and sale of attractive dosage forms of nicotine ...”

“If nicotine is the sine qua non of tobacco products and tobacco products are recognized as being attractive dosage forms of nicotine, then it is logical to design our products -- and where possible, our advertising -- around nicotine delivery ...”

“He does not start smoking to obtain undefined physiological gratifications or reliefs, and certainly he does not start to smoke to satisfy a non-existent craving for nicotine. Rather, he appears to start to smoke for purely psychological reasons -- to emulate a valued image, to conform, to experiment, to defy, to be daring, to have something to do with his hands, and the like. Only after experiencing smoking for some period of time do the physiological "satisfactions" and habituation become apparent and needed. Indeed, the first smoking experiences are often unpleasant until a tolerance for nicotine

54 Philip Morris U.S.A. [Inter-Office Correspondence, Seligman to Osdene](http://legacy.library.ucsf.edu/tid/ggy75c00), November 29, 1977, Bates Number: 207799380; <http://legacy.library.ucsf.edu/tid/ggy75c00>.

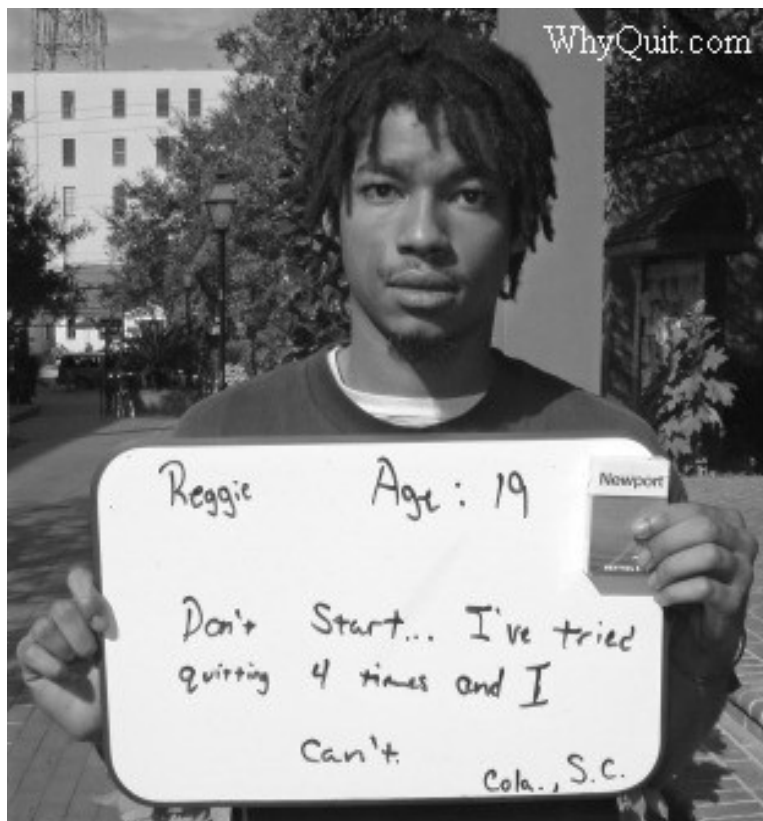
55 RJR Confidential Research Planning Memorandum, [The Nature of the Tobacco Business and the Crucial Role of Nicotine Therein](http://legacy.library.ucsf.edu/tid/sjw29d00), Claude E. Teague, Jr., RJR Assistant Director of Research, April 14, 1972, Bates Number: 501877121, <http://legacy.library.ucsf.edu/tid/sjw29d00>.

has been developed. This leaves us, then, in the position of attempting to design and promote the same product to two different types of markets with two different sets of motivations, needs and expectations.”

“Critics of tobacco products increasingly allege that smoking is dangerous to the health of the smoker. Part of this alleged danger is claimed to arise from ingestion of nicotine and part is claimed to arise from smoke components or smoke "tar". If, as proposed above, nicotine is the sine qua non of smoking, and if we meekly accept the allegations of our critics and move toward reduction or elimination of nicotine from our products, then we shall eventually liquidate our business. If we intend to remain in business and our business is the manufacture and sale of dosage forms of nicotine, then at some point we must make a stand.”

“If our business is fundamentally that of supplying nicotine in useful dosage form, why is it really necessary that allegedly harmful "tar" accompany that nicotine? There should be some simpler, "cleaner", more efficient and direct way to provide the desired nicotine dosage than the present system involving combustion of tobacco or even chewing of tobacco ...”

“It should be possible to obtain pure nicotine by synthesis or from high-nicotine tobacco. It should then be possible, using modifications of techniques developed by the pharmaceutical and other industries, to deliver that nicotine to the user in efficient, effective, attractive dosage form, accompanied by no "tar", gas phase, or other allegedly harmful substances. The dosage form could incorporate various flavorants, enhancers, and like desirable additives, and would be designed to deliver the minimum effective amount of nicotine at the desired release-rate to supply the "satisfaction" desired by the user.”



As shown by the final two paragraphs above, RJR’s 1972 memo accurately predicts both the

arrival of nicotine replacement products (NRT) and the combustion free electronic or e-cigarette. The lines between tobacco industry and pharmaceutical industry nicotine are now blurring horribly. A 2003 nicotine gum study found that 37% of nicotine gum users were hooked on the cure, each being chronic long-term gum users of at least 6 months.⁵⁶ It's a trend that will continue.

Brown & Williamson (B&W) was a cigarette company that merged with RJR in 2004. B&W's brands - now owned by RJR - included Barclay, Belair, Capri, Carlton, GPC, Kool, Laredo, Lucky Strike, Misty, North State, Pall Mall, Private Stock, Raleigh, Tareyton and Viceroy. Here are a few quotes from once secret B&W corporate documents:

July 18, 1977 - "How to market an addictive product in an ethical manner?"⁵⁷

June 24, 1978 - "Very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison."⁵⁸

March 25, 1983: "Nicotine is the addicting agent in cigarettes. It, therefore, seems reasonable that when people switch brands, if they have a certain smoking pattern (i.e. number of sticks/day), they will switch to a brand at the same nicotine level."⁵⁹

Founded in 1760, Lorillard Tobacco Company is the oldest U.S. tobacco company. Its brands include Kent, Maverick, Max, Newport, Old Gold, Satin, Triumph and True. The following telling quotes are from once secret Lorillard documents:

April 13, 1977: "Tobacco scientists know that physiological satisfaction is almost totally related to nicotine intake."⁶⁰

November 3, 1977 - "I don't know of any smoker who at some point hasn't wished he didn't smoke. If we could offer an acceptable alternative for providing nicotine, I am 100 percent sure we would have a gigantic brand."⁶¹

February 13, 1980: "Goal - Determine the minimum level of nicotine that will allow continued smoking. We hypothesize satisfaction cannot be compensated for by psychological satisfaction. At this point smokers will quit, or return to higher tar &

56 Shiffman S, Hughes JR, et al, [Persistent use of nicotine replacement therapy: an analysis of actual purchase patterns in a population based sample](#), Tobacco Control, November 2003, Volume 12, Pages 310-316.

57 Brown & Williamson Advertising Conference Report: [Synectics Problem Laboratory](#), July 18, 1977, Bates Number: 770101768; <http://legacy.library.ucsf.edu/tid/mri63f00/pdf>.

58 Brown & Williamson, [Memorandum: Future Consumer Reaction to Nicotine](#), June 24, 1978, Bates Number: 665043966; <http://legacy.library.ucsf.edu/tid/zfi21f00>.

59 Brown & Williamson, [Internal Correspondence, Project Recommendations](#), March 25, 1983, Bates Number: 670508492; <http://legacy.library.ucsf.edu/tid/uly04f00>.

60 Lorillard, [Present Status of the Nicotine Enrichment Project](#), April 13, 1977, Bates Number: 83251103; <http://legacy.library.ucsf.edu/tid/bgm09c00>.

61 Lorillard, [Letter](#), November 3, 1977, Bates Number: 03365541; <http://legacy.library.ucsf.edu/tid/cze91e00>

nicotine brands.”⁶²

Last but not least is British American Tobacco (BAT), which dates to 1902 and sells more than 300 brands worldwide. BAT’s international brands include Dunhill, Kent, Lucky Strike, Pall Mall, Vogue, Rothmans, Peter Stuyvesant, Benson & Hedges, Winfield, John Player, State Express 555, Kool and Viceroy. It does not own all these brands but is licensed by other companies to distribute them. Here are a few BAT admissions.

November 1961 - Smoking “differs in important features from addiction to other alkaloid drugs, but yet there are sufficient similarities to justify stating that smokers are nicotine addicts.”⁶³

1967- “There has been significant progress in understanding why people smoke and the opinion is hardening in medical circles that the pharmacological effects of nicotine play an important part... It may be useful, therefore, to look at the tobacco industry as if for a large part its business is the administration of nicotine (in the clinical sense).”⁶⁴

August 1979 - “We are searching explicitly for a socially acceptable addictive product. The essential constituent is most likely to be nicotine or a direct substitute for it.”⁶⁵

April 1980 - “In a world of increased government intervention, B.A.T should learn to look at itself as a drug company rather than as a tobacco company.”⁶⁶

In light of the above tiny sampling of tobacco industry admissions, should there be any doubt in our minds as to who was slave and who was master, who profited and who lost?

Freedom Starts with Admitting Addiction

It was not easy looking in the mirror and at last seeing a true drug addict looking back. I felt like I was surrendering, that after all those failed attempts I’d lost, that I was a total and complete failure. But as horrible as that moment felt, doing so was the most liberating event in my life. It was then and there I no longer needed the long list of lies I’d invented to try and explain my captivity, my need for that next fix.

Yes, there were countless times during my 30 years of bondage where I’d told myself that I

62 Lorillard, [Memorandum Secret, RT Information Task Force](http://legacy.library.ucsf.edu/tid/ust13c00), February 13, 1980, Bates Number: 94672618; <http://legacy.library.ucsf.edu/tid/ust13c00>.

63 Honorable Gladys Kessler, [Final Opinion](#), U.S. District Court, U.S. vs. Phillip Morris USA, Page 416, August 17, 2006.

64 British American Tobacco Memo, 1967, as stated in Federal Court of Australia, New South Wales, N-1089 of 1999, [Statement of Claim](#), Page 370.

65 British American Tobacco, Memo, [Key Areas - Product Innovation Over Next 10 Years for Long Term Development](#), August 28, 1979, Bates Number: 321469581; <http://bat.library.ucsf.edu/tid/fyz34a99>

66 British American Tobacco, [Brainstorming II](#), April 11, 1980, Bates Number: 109884190, <http://bat.library.ucsf.edu/tid/oli85a99>.

was hooked or addicted. But not until early 1999 did it hit me that, like alcoholism, it was for real. It was then that it hit me that I was no different from the methamphetamine or heroin addict.

Dr. M.A.H. Russell, a psychiatrist and addiction researcher at London's Institute of Psychiatry had me pegged all along. "There is little doubt that if it were not for nicotine in tobacco smoke, people would be little more inclined to smoke than they are to blow bubbles or to light sparklers," he wrote. "Cigarette-smoking is probably the most addictive and dependence-producing form of object-specific self-administered gratification known to man." These now famous quotes by Dr. Russell date back to 1974.⁶⁷

Over the years, millions of nicotine addicts have tried proving Dr. Russell wrong. In January 2003, a Miami based company, the Vector Group Ltd., began marketing a nicotine-free cigarette called Quest in seven northeastern U.S. states. A novelty item, thousands of smokers rushed out to purchase their first pack of nicotine-free cigarettes but locating any smoker who returned to purchase a second pack has proven near impossible.

We would no more smoke nicotine-free cigarettes than we'd smoke dried leaves from the backyard. Hello! My name is John and I'm a comfortably recovered nicotine addict.

It is not normal for humans to light things they place between their lips on fire and then intentionally suck the fire's smoke deep into their lungs. Nor is it normal to chew or suck a highly toxic non-edible plant, hour after hour, day after day, year after year. We rationalize such irrational behavior because of the neuro-chemical reward we can steal by performing the act; a nicotine induced dopamine explosion.

Cuddling up to the warm, cozy rationalization that, at worst, all we have is some "nasty little habit" serves the tobacco industry well. While habits can be manipulated, modified, toyed with and controlled, nicotine addiction is an all or nothing proposition. The industry knows that so long as its marketing continues to sell nicotine addicts on the idea that they're in full control, that they will likely continue to hand the industry their money until the day they die.

Regardless of the delivery device or method used to introduce nicotine into the bloodstream, fully accepting that nicotine dependency has permanently altered our brain not only simplifies the rules of recovery, it provides the key to staying free. Thousands of words but only one guiding principle for keeping our dependency permanently under arrest ... No nicotine today!

⁶⁷ Russell, MA, [The Smoking Habit and Its Classification](#), The Practitioner, June 1974 Volume 212 (1272), Pages 791-800.