Chapter 7

The Roadmap Home

This chapter provides a brief overview of recovery. It's a start to finish look at four distinct yet overlapping phases, followed by a list of health benefits navigating them brings. It lays a foundation for the four chapters that follow:

1. Physical Recovery
2. Emotional Recovery
3. Subconscious Recovery
4. Conscious Recovery

Brief Dependency Review

Nicotine addiction is the result of the introduction of a chemical into the body, which by happenstance is able to unlock and activate the same brain cells and pathways as the neurotransmitter acetylcholine. For us, nicotine's repeated activation of those receptors caused stimulation and permanent compromise of our brain's dopamine pathways, our mind's priorities teacher.

Those pathways were designed to generate urges, wanting and desire, so as to make events that stimulate them, species survival activities, extremely difficult to forget or ignore. But prior to
nicotine dependency onset, there was no "wanting" to use again.

Initially, arriving nicotine would cause a burst of unearned dopamine, providing a wanting satisfaction sensation for wanting that didn't yet exist. But for those of us susceptible to dependency onset, continued use would end free stealing.

Soon, our tonic dopamine level started to decline in response to falling nicotine levels. This resulted in "wanting." That wanting would soon be amplified by the anxiety generating tease of an ever growing number of wanting satisfaction memories.

Each of those high definition memories documented exactly how wanting was satisfied, by arrival of a new supply of nicotine. Arrival of more nicotine would generate a sudden phasic burst of dopamine, restoring our tonic dopamine level and temporarily satisfying wanting.

Continued use caused our brain to attempt to de-sensitize itself to nicotine's presence by increasing the number of acetylcholine receptors in multiple brain regions. Continued use also conditioned our subconscious mind to expect a new supply of nicotine when specific times, locations, people, activities or emotions were encountered.

Now, any attempt to stop using nicotine could result in the same wanting related anxieties felt when deprived of food or water.

Declining by one-half every two hours, years of struggling to keep sufficient nicotine in our bloodstream, so as to hold wanting at bay, left us falsely convinced that nicotine was core to our existence, as fundamental as eating. Educated recovery is about understanding both the lie and dependency's effects upon us.

It is my hope that education and understanding will make any remaining fears of life without nicotine so insignificant that it becomes impossible not to notice the beauty that recovery gradually unfolds before you. It's my hope that understanding aids you in appreciating the full glory of again standing on your own, as you fully engage life as "you."

But that's only a hope. Once home, whether our journey is best
characterized as having been a cakewalk, a love fest, a non-event, frantic or nightmarish, the only thing that matters is that each challenge and each day remains totally do-able.

Understanding where we now stand is the window to where we've been. An awakening is at hand. Allow your mind to see the lies, the depths to which they took you, and where you now stand.

While such awareness itself can be a tad frightening, why spoil healing with fear? Why fear arrival of a calm and comfortable day where not once do thoughts of using enter our mind? Why fear such days becoming so frequent that they become our new sense of normal?

**Ending Nicotine Use**

That first courageous step is huge, the biggest baby step of all. Mustering the courage to at last say "no" to that next nicotine fix is the only path to the wonderfulness beyond, a return to a calm, quiet and beautiful mind that dependency and wanting have far too long keep hidden from view.

Contrary to marketing of those pushing an ever growing array of nicotine delivery devices, the only path ending wanting for more is to end nicotine's arrival. And the speed of natural recovery can be seen within just one hour of remaining 100% nicotine-free, as the concentration of nicotine within your blood plummets by 25%.

"Half-life" is defined as "the time required for half the quantity of a drug or other substance deposited in a living organism to be metabolized or eliminated by normal biological processes."¹ Most older cessation literature

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firmly fixes nicotine's elimination half-life at about two hours.\(^2\)

But nicotine's half-life can vary substantially based upon genetic, racial, hormonal, diet, activity and age factors.\(^3\) For now, let's ignore genetic differences, as we have no idea which genes we do or don't have.

As for racial variations, a 1998 study found an average nicotine half-life of 129 minutes in Caucasians and 134 minutes in African Americans.\(^4\) A 2002 study compared Chinese-American, Latino and Caucasian smokers. It found that Latinos had the shortest half-life (122 minutes), Chinese-Americans the longest (152 minutes), with Caucasians in the middle (134 minutes).\(^5\)

Nicotine's half-life is shorter in women (118 minutes) than men (132 minutes), and even faster in women taking oral contraceptives (96 minutes). This is thought to be associated with estrogen.\(^6\)

Its half-life is shorter during pregnancy (97 minutes) than after giving birth (111 minutes).\(^7\) Sadly, new born babies whose mothers smoked endure a nicotine withdrawal period five times longer than what their mother's would have been. Instead of the newborn having a 2-hour elimination half-life, it balloons to 11.2 hours.\(^8\) If considering breast-feeding, nicotine's breast milk half-life averages 97 minutes.\(^9\)

Interestingly, a 1993 nicotine patch study found that when nicotine was administered directly into the bloodstream (intravenously) it had a 2 hour

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3 Benowitz NL, Clinical pharmacology of nicotine: implications for understanding, preventing, and treating tobacco addiction, Clinical Pharmacology & Therapeutics, April 2008, Volume 83(4), Pages 531-541.
elimination half-life but when administered through the skin via the nicotine patch (transdermally), once the patch was removed nicotine's elimination half-life was 2.8 hours. This finding was confirmed by a second patch study which found it to be a minimum of 3.3 hours.

Most nicotine is broken down into six primary metabolites by the liver (mostly cotinine: 70-80%). The kidneys remove (eliminate or excrete) nicotine and its metabolites from the bloodstream.

Thus, any activity which increases blood flow though the liver (exercise or eating) accelerates nicotine depletion. Liver blood flow increases by 30% after meals, with a 40% increase in the rate that nicotine is cleared from arriving blood.

As we learned in Chapter 4, acidic urine accelerates nicotine elimination, while alkaline urine actually allows its re-absorption back into the body.

As suggested by the above half-life data, most of us had sufficient nicotine reserves to comfortably make it through 8 hours of sleep each night (4 half lives leaving us with a minimum of 6.25% of our normal daily supply).

In fact, the amount of nicotine remaining after sleep is actually a tad higher than simple division suggests. It makes sense, as the amount of blood flow and nicotine passing through and being metabolized by the liver decreases while sleeping.

As you can see, our remaining reserves will become so small within 24 hours of ending all nicotine use that they become difficult to detect (.02 or just 2/100ths of our normal daily level). It's here that surgery (nicotine extraction) is nearly complete and deep dependency healing begins in earnest. Within 3 days, with absolute certainty, you will inhabit a nicotine-free body and mind.

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As for detection, we often get the question, how long after I stop using nicotine will my insurance company or employer be able to detect nicotine in my system? As seen above, unless examining hair, which permanently records nicotine use, trying to measure rapidly falling nicotine levels in blood, urine and saliva is all but useless as a marker of use.

That's why insurance companies and employers normally test for cotinine, one of nicotine's longer-lasting metabolites, which has a generally recognized half-life of about 17 hours.\(^\text{14}\)

In regard to recovery what's important is that remaining levels become so small within 24 hours of ending use that re-sensitization and the brain's adjustment to functioning without nicotine have no choice but to commence.

Within 24 hours the mind and body will begin to experience overlapping recovery on four levels: physical, emotional, subconscious and conscious. Keep all nicotine on the outside and within 72 hours of ending use, regardless of your body's nicotine half-life or elimination rate, you'll stand atop withdrawal's mountain.

The most challenging portion of recovery will be behind you. While your climb was quick, the slope of the journey down the other side, although initially brisk, is continuous yet ever so gradual. Easier time with fewer bumps, the balance of the journey becomes an exercise in patience.

Yet, violate the "Law of Addiction" - just one hit of nicotine - and forget about any gradual down slope or doing easy time. It's called relapse. You'll either resume life as an actively feeding addict or need to again endure nicotine detox and another climb to the top.

The price of each climb is further depletion of core dreams and desires. Although able to rest and rejuvenate once at or over the top, amazingly few have the stamina of purpose needed to make back-to-back climbs.

Expect to be teased during both your climb and descent by those selling chemicals that stimulate brain dopamine pathways (tobacco products, cigarettes, e-cigarettes, replacement nicotine, bupropion and varenicline). Expect them to try to discourage you.

Listen for the false and deceptive implication that few succeed in stopping on their own. Truth is, it's how the vast majority will succeed this year, and they know it.

Clearly, they want your money. And sadly, nearly all are willing to lie to get it.

Expect their tease to falsely suggest that their product makes the climb easy, or as suggested by recent Nicorette commercials, that it make it "suck less." Don't listen. If the product stimulates dopamine pathways, physical withdrawal's climb isn't fully underway until product use ends.

Continued stimulation does not aid recovery but delays it. That's why advertising the product's cessation results on the day product use ends, while still under the chemical's influence, is not about science but salesmanship.

As Joel says, we'd only have ourselves to blame for intentionally extending what should have been a few days of withdrawal into weeks or months. Not only do users face the side-effect risks posed by each product, they face having to someday adjust to living without the dopamine pathway stimulation each provides.

Let's turn our attention to what happens once we muster the courage to say "no." Let's start with the body's physical response to ending all use.
Physical Readjustment

The brain needs time to re-adjust its equilibrium or homeostasis to again functioning without nicotine. Nicotine caused both activation and deactivation of nicotinic-type acetylcholine receptors. A significant increase in the number of receptors (up-regulation) may have occurred in as many as eleven different brain regions.

The brain needs for us to develop the patience necessary to allow the time needed to restore natural sensitivities and remove its defenses against nicotine. If allowed, it will work around-the-clock restoring neurotransmitter sensitivities and returning receptor counts to normal.

As explained, the pace of healing is amazingly fast. Within three days the mind and body become nicotine-free and we move beyond peak withdrawal.

While the vast majority of physical re-adjustments are generally recognized as being complete within the first two weeks, recent studies have found that some symptoms, primarily related to neuron sensitivity restoration and emotions, may persist for 3-4 weeks.

Aside from the brain, the body needs time for its physiology to adjust to again functioning without nicotine and all other chemicals introduced by our method of delivery. As it does, the withdrawal symptoms experienced may be none, few, some or many.

Although Chapter 9 provides a detailed list (and discussion) of possible withdrawal symptoms, I encourage you to skip it. That's right. Don't read

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15 Picciotto MR, et al, It is not "either/or": activation and desensitization of nicotinic acetylcholine receptors both contribute to behaviors related to nicotine addiction and mood, Progress in Neurobiology, April 2008, Volume 84(4), Pages 329-342; also see, Even N, et al, Regional differential effects of chronic nicotine on brain alpha 4-containing and alpha 6-containing receptors, Neureport, October 8, 2008, Volume 19(15), Pages 1545-1550.

it. If needed, it'll be there. Such lists have a tendency to transform a sensation that may have been barely noticeable into a full-blown concern. FFN-TJH's primary goal is to destroy fears, not foster them.

Both live and online at Freedom and Turkeyville, we've worked with thousands navigating recovery. Aside from expected anxieties and emotions, many report no noticeable physical symptoms at all.

Also, don't confuse the time needed for the mind to adapt to functioning without nicotine's influence, with the time needed for deep tissue healing and purging of tobacco tars. As suggested by the recovery timetable at the end of this chapter, it takes significant time to fully expel toxins and carcinogens and heal from their assaults.

**Emotional Readjustment**

Although chemical in nature, a long and intense relationship is ending. For most, it was the most dependable relationship we'd ever known.

Even if our fix was bummed or borrowed and the flavor of the brand was horrible, even if the cigarette was damp, slightly torn, broken and in need of repair, or a stale cigarette butt from an ashtray, the nicotine was always there.

Never once did nicotine let us down in providing temporary relief from urges and wanting. Once inside our bloodstream, within seconds we experienced replenishment: nicotine's stimulation of our nervous system accompanied by satisfaction of our mind's latest cycle of need.

But now that's all behind us. It's over, finished, done. And as with ending any long-term relationship we must navigate the sense of loss emotions flowing from it.

Denial, anger, bargaining and depression are normal emotional phases
associated with any significant loss. Navigating each brings us closer to the final phase marking completion of emotional recovery, acceptance.

**Subconscious Readjustment**

Nicotine's two-hour half-life compelled us to select replenishment times, situations and patterns. While you may not have recognized the patterns, your subconscious mind did.

When did you replenish? Upon waking each morning, entering the bathroom, before or after a meal, in the yard or garage, while traveling, surrounding work, around friends, while drinking, on the telephone, before bed, when happy, sad, stressed or mad?

Whether or not aware of our use patterns, our subconscious recorded the times, places, circumstances and emotions during which nicotine replenishment occurred. Those situations became conditioned use cues, alerting our subconscious that it was time for more.

Encountering a use cue would trigger a gentle urge reminding us that it was time to feed. Normally we simply obeyed. But if not, anxiety alarms may have sounded triggering a full-blown crave episode.

Subconscious recovery is about meeting, greeting and extinguishing each conditioned use cue. The subconscious mind does not plot, plan or conspire. It simply reacts to input.

If we say "no" during what's normally a less than 3 minute crave episode (which time distortion may cause to feel far longer), in most instances a single encounter will sever and break the nicotine use association, extinguishing the cue that caused it.

Each time we extinguish a cue we are rewarded with the return of another aspect of a nicotine-free life. That's right, crave episodes are good not bad.
It's how we take back life, just one time, place, person, activity or emotion at a time.

In Chapter 11 we'll explore a host of crave coping techniques. For now, understand that: (1) there is no force or circumstance on planet earth that can compel us to introduce nicotine into our bloodstream; (2) we will always be able to handle up to three minutes of wanting anxiety; and (3) the reward at the end of each episode, extinguishing and silencing another use cue, is always worth vastly more than the price of enduring it.

**Conscious Readjustment**

By far, normally the easiest yet longest layer of recovery is reclaiming normal everyday thinking.

Unlike a less than three-minute subconscious crave episode, the conscious mind can fixate upon a thought of wanting to use for as long as we are able to maintain concentration and focus. How long can you keep your mind focused upon your favorite food? Look at a clock and give it a try. Can you taste it? Does it make your mouth water? Are you feeling an urge?

Now think about your favorite nicotine use rationalization. What was your primary use justification?

Conscious recovery is the period of time needed for new nicotine-free memories to gather, overwrite or suppress all the durable dopamine pathway memories documenting how wanting was briefly satisfied by using more. It's the time needed to move beyond their conscious tease.

Conscious recovery is very much within our ability to accelerate. It is not necessary to destroy drug use memories in order to alter their impact upon us. It's done by seeing our pile of old wanting satisfaction memories for

*Photo by National Cancer Institute*
the truth they reflect; that each memory was created by an actively feeding addict in varying degrees of need of more.

It's also accomplished by a willingness to let go of our use rationalizations. This is done by grabbing hold of each use justification, exposing it to honest light, and recasting it using truth.

**Chapter 12** (Conscious Recovery) is about using logic, reason and science to accelerate this final phase of recovery. As seen in **Chapter 4** (Rationalizations), some use rationalizations can be laughed away. Others require a bit more distance from active dependency before honesty and clarity of thought allow us to appreciate the truth and let go. And there may be one or more rationalizations may be harder to release and move beyond.

Contrary to nicotine industry marketing, there was only one reason we didn't stop using long, long ago. Our new addiction quickly conditioned us to expect anxiety, irritability, anger and depression to begin building if we waited too long between feedings.

We didn't continue using because we liked it. We did so because we didn't like what happened when we didn't use it.\(^{17}\)

**Arriving Home**

What was it like to go entire days without once thinking about wanting to smoke, dip, chew, suck or vape nicotine? What was it like being "you"?

Don't feel alone if you can no longer recall. That's what drug addiction is all about, quickly burying nearly all remaining memory of the beauty of life without using.

Trust in your common sense and dreams. It's my hope that you're curious

about what it's like to go days, weeks and then months without once wanting to introduce nicotine back into your bloodstream. Don't be afraid as there's nothing to fear, except the delay fear causes in taking that first courageous step.

We leave absolutely nothing of value behind. In fact, every neuro-chemical that nicotine controlled already belonged to us. As recovering addicts, we can do everything we did while enslaved, and do it as well as or better once free.

Why fight and rebel against freedom and healing when within just two weeks it will be savored, embraced, protected, hugged and loved? Why see challenges, freedom's stepping stones, as frightening when they provides indisputable evidence of just how infected our life had become?

My prior attempts failed because I fought recovery, and did so in ignorance and darkness. Yes, every now and then I'd get lucky and land a punch, but freedom was short lived. But this time was different.

This time Joel and his insights effectively turned on the lights. Now my opponent couldn't be clearer. My eyes and mind were opened to exactly what it takes to both fail and succeed.

Joel burned an extremely bright line into my mind, one I'll do my very best to keep clean and clear every remaining day of my life. He taught me that I get to stay and live here on the free side of that line so long as it's never crossed, so long as all the world's nicotine remains on the other, so long as complacency isn't allowed to obscure it.

Let's review a few health benefits of life on the free side of dependency's bars.

**Recovery Timetable**

Most but not all benefits listed below are related to smoking. Why? Because, at least here in the U.S., there are ten times as many smokers as oral tobacco users. By far, smoking reflects the greatest health risks of any form of nicotine delivery, and until recently the vast majority of

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research has focused on it.

But just because science cannot yet tell us when most oral tobacco, NRT or e-cig recovery benefits occur, doesn't mean they are not happening.

**When ending all tobacco and nicotine use, within ...**

- 20 minutes - Our blood pressure, heart rate and the temperature of our hands and feet return to normal.
- 8 hours - Remaining nicotine in our bloodstream will have fallen to 6% of normal peak daily levels, a 94% reduction.
- 12 hours - The ex-smoker's blood oxygen level will have increased to normal while carbon monoxide levels have dropped to normal too.
- 24 hours - Anxieties peak and within two weeks should return to near pre-cessation levels.
- 48 hours - Damaged nerve endings have started to re-grow and our sense of smell and taste are beginning to return to normal. Cessation anger and irritability peaks.
- 72 hours - Our body is 100% nicotine-free and over 90% of all nicotine metabolites (the chemicals it breaks down into) have been ionized or excreted via urine. Symptoms of withdrawal have peaked in intensity, including restlessness. The number of cue induced crave episodes will peak for the "average" ex-user. Lung bronchial tubes leading to air sacs (alveoli) are beginning to relax in recovering smokers. Breathing is becoming easier and the lungs functional abilities are starting to increase.
- 5 to 8 days - The "average" ex-smoker will encounter an "average" of three cue induced crave episodes per day. Although we may not be "average" and although serious cessation time distortion can make minutes feel like hours, it is unlikely that any single episode will last longer than 3 minutes. Keep a clock handy and time them.
- 10 days - The "average ex-user is down to encountering less than two crave episodes per day, each less than 3 minutes.
- 10 days to 2 weeks - Recovery has likely progressed to the point where our addiction is no longer doing the talking. We are beginning

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to catch glimpses of where freedom and healing are transporting us.

- 2 weeks - Blood circulation in our gums and teeth is now similar to that of a non-user.
- 2 to 4 weeks - Cessation related anger, anxiety, difficulty concentrating, impatience, insomnia, restlessness and depression have ended. If still experiencing any of these symptoms get seen and evaluated by your physician.
- 3-4 weeks - Brain acetylcholine receptor counts up-regulated in response to nicotine's presence have now down-regulated, and receptor binding has returned to levels seen in the brains of non-smokers.\(^\text{20}\)
- 2 weeks to 3 months - If an ex-smoker, heart attack risk has started to drop and lung function continues to improve.
- 3 weeks to 3 months - If an ex-smoker, circulation has substantially improved. Walking has become easier. Any chronic cough has likely disappeared. If not, contact your physician.
- 1 to 9 months - Any smoking related sinus congestion, fatigue or shortness of breath have decreased. Cilia have re-grown in our lungs, thereby increasing their ability to handle mucus, keep our lungs clean and reduce infections. The body's overall energy level has increased.
- 1 year - If an ex-smoker, excess risk of coronary heart disease has dropped to less than half that of a smoker.
- 5 to 15 years - If an ex-smoker, risk of stroke has declined to that of a non-smoker.
- 10 years - If an "average" ex-smoker (one pack per day), our risk of death from lung cancer has declined by almost half. Risk of cancer of the mouth, throat and esophagus has also decreased.
- 15 years - Our risk of coronary heart disease is now that of a person who has never smoked.

Breathe deep, hug hard, live long,

\[\text{\textbf{Signed}}\]

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