

Chapter 9

Physical Recovery

Neuronal Re-sensitization - Temporarily Numb

Exactly how and why the brain diminishes the number of active $\alpha 4\beta 2$ -type acetylcholine receptors (down-regulation) after nicotine use ends is still poorly understood. What we do know is that once nicotine use ends we temporarily have far too many active receptors. There are so many unfed receptors that normal species survival activities (eating, drinking water, accomplishment, nurturing, peer acceptance and sex) are temporarily unable to provide adequate brain dopamine pathway stimulation.

Early recovery puts us face-to-face with hard physiological evidence of nicotine's influence and standing among the brain's pre-programmed priorities. Again, in terms of healing, the emptiness and emotional collision we may temporarily sense is good not bad. Our brain is working its "butt off" to diminish the number of active receptors and restore sensitivities. Almost as quickly as we notice our sense of smell and taste being enhanced, our brain is working to restore natural sensitivities by down-regulating receptor counts.

SPECT stands for Single Photon Emission Computed Tomography. It is a scan during which a radioactive substance is put into the bloodstream and can be followed as it works its way through the body and into the brain. A camera capable of detecting gamma radiation is then rotated around the body or head taking pictures from many angles. A computer is then used to put the images together to create a picture of activity within a specific slice of the body or brain.

A 2007 study used SPECT scans to follow dynamic changes in acetylcholine receptor down-regulation binding during smoking cessation. It compared those findings to receptor activity inside the brains of non-smokers.²⁷⁸ It found that within four hours of ending nicotine use that acetylcholine receptor binding potential had already declined by 33.5%.

The good news is that binding potential rebounded by 25.7% within ten days of ending nicotine use and then "decreased to the level of non-smokers by around 21 days of smoking cessation."

We don't need to put radiation into our bloodstream or do a SPECT scan of our brain to know that the de-sensitized period experienced during recovery is temporary, normal and expected. It's enough to know that we are sensing and feeling what is happening inside our brain as it adjusts to functioning without nicotine. Don't fear it, savor it.

278 Mamede M, et al, [Temporal change in human nicotinic acetylcholine receptor after smoking cessation: 5IA SPECT study](#), Journal of Nuclear Medicine, November 2007, Volume 48(11), Pages 1829-1835.

Symptoms

WARNING: The below symptoms relate to cold turkey cessation only. They are not intended for those using Chantix, Champix, Zyban, Wellbutrin, nicotine replacement products (NRT) or any other quitting product. Carefully review warnings and potential side effects noted on or inside product packaging if using any quitting product. Immediately consult your health care provider or pharmacist if any symptom or possible side-effect causes you or your loved ones concern, including changes in thinking, moods or behavior.

WARNING: The list of symptoms below is NOT MEDICAL ADVICE but simply an outline of documented recovery symptoms.

IMMEDIATELY contact our physician should you experience any condition or symptom that causes you CONCERN or ALARM, including continuing depression.

Within reason and common sense, if going cold turkey it is fairly safe to blame withdrawal for most effects felt during the first three days, but not always. Pay close attention to what your body is telling you and if at all concerned call your doctor.

While reviewing the symptoms below, keep in mind that I am not a physician. I am a nicotine cessation educator. The below information is intended to support, not replace, the relationship that exists between you and your doctor.

Do not rely upon any information in this book to replace individual advice from your physician or other qualified health care provider.

Every recovery is different. The variety and intensity of effects experienced during recovery varies from person to person, and even between each person's own cessation experiences. Over the years we've seen thousands of new ex-users surprised to find that they experience few symptoms, if any, while others were confronted with multiple symptoms.

By understanding some of the symptoms, how frequently they occur and how long they last, it may be possible, in some instances, to minimize their impact by action or thought.

As we just learned, brain dopamine pathway sensitivities can take up to three weeks before fully restored. Although physical withdrawal symptoms normally peak within the first three days, a 2007 study reviewed all symptom studies and found that within two weeks they had passed for most but not all. It suggests that if symptoms remain “slightly elevated” beyond two weeks that they will fully resolve within 3 to 4 weeks.²⁷⁹ Even so,

279 Hughes, JR, [Effects of abstinence from tobacco: valid symptoms and time course](#), Nicotine and Tobacco Research, March 2007, Volume 9(3), Pages 315-327.

within two weeks the ongoing process of restoring and fine-tuning natural sensitivities reach a point where most of us begin experiencing confidence building glimpses of the full flavor of being free.

A serious concern with symptoms lists such as this is that “smokers with higher levels of perceived risk may find it more difficult to quit and remain abstinent due to higher levels of anticipated or experienced withdrawal symptoms.”²⁸⁰

They provide a “junkie-mind” looking for relapse justifications a rich source of fuel for accentuating or highlighting something that may otherwise have remained minor, secondary, suppressed or ignored. But how can we not notice symptoms?

If we have a toothache at the same time as a headache, the one that will receive the most attention and focus is the one generating the greatest pain or discomfort. As soon as the discomfort from our primary concern falls below that of our secondary concern, our focus immediately shifts to what was our secondary concern.

We do the same type of primary/secondary focusing with the effects of withdrawal and the phases of recovery. Sometimes we don't even notice a particular symptom until the discomfort of a prior one subsides.

Although the intensity of each remaining effect is likely far less significant than the one that preceded it, the mind of the uneducated drug addict is impatient and likely looking for relapse justifications. Upon decline of the overall symptoms and effects experienced within the first 72 hours, recovery remains continuous yet at times may be so gradual that - like trying to watch a rose bud open - it almost becomes impossible to notice change.

Reading symptom lists may tend to cause the mind to look for and expect symptoms to occur. In fact, mental expectations are capable of generating physical symptoms. This phenomenon - known as psychological overlay - is very real. Most starting home do NOT experience the majority of the symptoms listed below.

So why even share this list? You may very well experience one or more symptoms. Knowing how often they occur and how long they last brings potential to diminish anxieties, thus increasing our odds of success. The list is shared to educate you regarding symptoms normally seen, how long they last, and to motivate you to communicate with your doctor regarding any symptom, whether listed or not, that is causing you concern.

Do not sell your mind on the belief that starting our new life needs to be painful or intense. If we learn to relax, dump irrational fears, maintain a positive attitude, keep our reasons for wanting to break free in the forefront of our mind, abandon unrealistic victory standards such as "quitting forever", adopt realistic victory standards such as celebrating after the next hour, challenge or day, eat smaller yet healthy portions of food more

280 Weinberger AH, et al, [Relationship of perceived risks of smoking cessation to symptoms of withdrawal, craving, and depression during short-term smoking abstinence](#), Addictive Behaviors, July 2008, Volume 33(7), Pages 960-963.

frequently, avoid skipping meals, sip on some form of natural fruit juice for the first three days, if a big caffeine user consider a reduction of up to one-half of our normal daily intake, this adventure home to a nicotine-free life can turn out to be the most deeply satisfying personal experience of our entire life!

Many withdrawal symptoms have roots in the absence of nicotine, and the time needed for the mind to physically adapt to functioning without it. The brain isn't just down-regulating acetylcholine receptors associated with dopamine pathway stimulation. It is resuming full control of the flow of all neuro-chemicals that were influenced by nicotine, including adrenaline and serotonin pathways.

While it may take science decades to untangle, measure and quantify all cessation sensitivity interplays, researchers are already cataloging subjective symptom reports by tens of thousands who have attempted cessation. As seen earlier, they are also using brain imaging studies and other non-invasive exams to discover how the brain is physically altered by nicotine's absence.

Homeostasis is defined as “the ability or tendency of an organism or cell to maintain internal equilibrium by adjusting its physiological processes.”²⁸¹ Our enslaved mind had adjusted to functioning within a sphere of nicotine normal. Now that nicotine's arrival has ended the brain's grand design in trying to keep things the same by maintaining homeostasis is a critical part of our ticket home.

Anxiety - Whether dealing with heroin dependency, alcoholism or nicotine addiction, anxiety is a common recovery symptom among many drugs of addiction.²⁸² Recovery anxiety can have many sources. One study suggests that much of the underlying current of anxiety felt during the first seven days appears to be the product of a mind preoccupied with risk of relapse.²⁸³ Remember, it is impossible to fail so long as no nicotine enters the bloodstream. Thinking and dreaming about nicotine use do not cause relapse. It takes action.

The primitive limbic mind has been fooled into associating nicotine use with survival. It may see ending its use as akin to starving ourselves to death. Belief in addiction's primary deception can result in anxieties that overwhelm us.

We can also generate, fuel and feed anxieties on purpose. An addict could easily sabotage his or her own recovery by purposefully focusing on the negative, allowing emotions to fester and build. We can then intentionally crash our emotions in hopes of providing sufficient justification to relapse.

281 [Homeostasis](http://dictionary.reference.com/browse/homeostasis). The American Heritage Science Dictionary. Retrieved July 12, 2008, from Dictionary.com website: <http://dictionary.reference.com/browse/homeostasis>

282 Hall SM, [The abstinence phobias: links between substance abuse and anxiety](#), The International Journal of the Addictions, September 1984, Volume 19(6), Pages 613-631

283 Brown RA, et al, [Anxiety sensitivity: relationship to negative affect smoking and smoking cessation in smokers with past major depressive disorder](#), Addictive Behaviors, Nov-Dec 2001, Volume 26(6), Pages 887-899.

Withdrawal symptoms peak within 72 hours as the undercurrent of anxieties begin to subside. It's during this period that our mind is forced to accept the fact that all nicotine is gone, yet brain function seems to be getting better not worse. Oh, you may still feel disconnected and foggy for a while (as discussed below) but overall brain function is now on the mend.

While simple to sit here writing about the benefits of dumping needless anxiety generating fears, and about there being no need to be afraid of coming home after years or even decades of chemical captivity, I do appreciate that it is easier said than done.

For some, emptying the mind of nicotine can feel like an emotional train wreck. If so, it's wreckage that's quickly cleared, as the brain works around the clock to restore homeostasis.

If we remain 100% nicotine-free for just 72 hours, unless in the grips of self-induced fears, we should begin noticing the underlying current of anxieties begin to ease off. By then, billions of brain neurons are basking in nicotine-free, oxygen rich blood serum. Yes, as early as three days and homeostasis sensitivity re-adjustments can be felt bearing fruit.

Early healing is rapid. Slow, deep breathing while intentionally working to relax and reassure a frightened mind may help diminish anxieties. It also can't hurt to use physical activity or exercise to stimulate blood circulation. As mentioned in Chapter 8, keep an eye on caffeine intake as caffeine intoxication can foster anxieties. Limiting sugar intake may have a calming effect. Eating small portions of healthy food more frequently will help stabilize blood sugars and avoid having to deal with anxieties associated with the onset of hunger.

A 2001 study by Ward entitled "Self-reported abstinence effects in the first month after smoking cessation," may be the most detailed withdrawal symptom study ever, and provides fascinating recovery symptom insights.²⁸⁴ The Ward study found that, on average, anxieties peak on day one (within 24 hours) and, for most, within two weeks return almost to pre-cessation levels.

Irritability -- often anxiety's aftermath -- seems to peak at about 48 hours while restlessness peaks at 72 hours. According to the study, both begin hovering back around pre-cessation levels within two weeks.

Anger - Anger apparently peaks for the average quitter at about 48 hours (day 2) and within 72 hours is beginning to return to near pre-cessation levels. Although adrenaline was a non-addictive element of our nicotine high, whether the rational mind uses anger to invoke the body's fight or flight response, or cessation anger simply reflects the boiling point of anxiety driven fears, the good news is that it only takes a couple of days of

284 Ward, MM et al, [Self-reported abstinence effects in the first month after smoking cessation](#), Addictive Behaviors, May-June 2001, Volume 26(3), Pages 311-327.

recovery patience to begin seeing improvement.

Find ways to vent frustrations that won't cause needless hurt to family, loved ones, friends or co-workers. Walk, run, vent into a pillow, find a punching bag, bend a piece of steel, or bite your lip if need be. Share your feelings with family, friends or other support network.

Impatience - Whether impatience is an independent recovery symptom or simply an expected result of anxiety, anger and restlessness is subject to debate. What isn't debatable is the fact that as nicotine addicts, we were each conditioned by our dependency to be extremely impatient when it came to satisfying urges and craves.

As active users, we were each in full control in responding to and quickly satisfying those early urges announcing it was again time for replenishment. We smokers didn't need patience. Increasingly, neither do those using chewing tobacco and snuff. Nicotine delivery engineering is mastering use of alkaline pH buffering to shorten the time needed for nicotine to penetrate oral mouth tissues and enter the bloodstream.²⁸⁵

Impatience conditioning is even worse among smokers. We could quiet any urge within 8-10 seconds of a puff.

Nicotine laden smoke would travel into our mouth and throat, past our larynx (housing our vocal cords), down four inches of trachea or windpipe, and then branch into our left and right lungs via our two main bronchial tubes. Once inside each lung it would descend down ten smaller bronchial tubes before striking an estimated 240 million²⁸⁶ thinly walled air sacs called alveoli. Here nicotine passed through each alveoli membrane and into the bloodstream's pulmonary veins.

Inside the bloodstream, nicotine was pumped over to our heart where between beats it collected in the left atrium. The next beat would pump it through the left ventricle before being ejected upward into the aorta, where it branched and traveled to the brain via either the carotid or vertebral arteries. It then crossed the blood brain barrier. The amount of nicotine from that first puff would be sufficient to occupy up to 50% of our brain's a4b2-type acetylcholine receptors. These receptors would stimulate our brain dopamine pathways creating a powerful dopamine "aaah" sensation.

When smoked, the entire journey took less than 10 seconds. If sucked, chewed or dipped, the oral nicotine user's impatience is satisfied in a minute or two, depending on pH buffers or added abrasives. Is it any wonder that we nicotine addicts have very little patience when it comes to satisfying depletion related urges, craves and anxieties?

285 Benowitz NL, [Systemic absorption and effects of nicotine from smokeless tobacco](#), Advances in Dental Research, September 1997, Volume 11(3), Pages 336-341.

286 Ochs M et al, [The number of alveoli in the human lung](#), American Journal of Respiratory and Critical Care Medicine, January 1, 2004, Volume 169(1), Pages 120-124.

So how do we develop the patience to navigate the up to three days needed to achieve peak physical withdrawal, the up to 3 minutes needed to outlast a cue induced crave trigger, or the duration patience needed to allow new nicotine-free memories time to bury reminders of years of bondage? The primary answer is just one moment and challenge at a time.

Inability to concentrate or a foggy mind - According to the Ward study, the feeling that our concentration is not as good or that our mind now lives in a fog is experienced, to one degree or another, by almost two-thirds of recovering nicotine addicts. The return of our clearness of mind and concentration may seem ever so gradual but within two weeks most begin experiencing concentration levels very close to those of never-smokers.

Poor concentration, focus and an inability to think clearly can be associated with low blood sugar. It's important to understand that nicotine force-fed us stored fats and sugars with each new puff. It's why we were able to skip breakfast and/or lunch and yet not feel hungry. Nicotine use caused our brain to release adrenaline which in turn activated "fight or flight" pathways, which pumped stored fats and sugars into our bloodstream.

Once we stop putting nicotine into our body the adrenaline feedings end. Continuing to attempt to skip meals will cause decline in blood sugar (glucose) levels, which in turn could impact concentration. Nicotine is no longer our spoon. It isn't necessary to eat more food but to learn to spread our normal daily food intake out more evenly over the entire day.

Women would be well advised to put a very small amount of fuel into their stomach about every three hours and men at least every five. As discussed in Chapter 8, unless diabetic or our health care provider recommends otherwise, consider drinking some form of natural fruit juice during the first 72 hours. Cranberry is excellent. Not only will it aid in helping stabilize blood sugar, it is acidic and may slightly accelerate elimination of the alkaloid nicotine.

Even if unable to entirely stabilize blood-sugar fluctuations the symptom is temporary and relief on the way. You may want to temporarily reduce or avoid alcohol, which reduces brain oxygen and impairs concentration. Brisk walks, other physical exercise or slow deep breathing may deliver additional focus by increasing oxygen to the brain.

Remember, life-giving oxygen is a far healthier brain stimulant than a super toxic chemical that likely eats brain gray matter²⁸⁷ and destroys memory.²⁸⁸

287 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.

288 Ernst M, et al, [Smoking history and nicotine effects on cognitive performance](#), Neuropsychopharmacology, September 2001, Volume 25(3), Pages 313-319.

Sadness and depression

WARNING - *The following depression discussion is intended for cold turkey quitters only, not for those taking cessation medications. Some patients using Chantix and Champix (varenicline) have experienced changes in behavior, agitation, depressed mood, and suicidal thoughts or actions. Some experienced these symptoms when they began taking varenicline, and others developed them after several weeks of treatment or after they stopped taking it. If either you, your family or caregiver notice agitation, depressed mood, or changes in behavior that is not typical for you, or if you develop suicidal thoughts or actions, stop taking varenicline and call your doctor immediately. If using any quitting medication do not rely upon this book regarding any symptoms but instead present any and all concerns to your treating physician or pharmacist.*

First, the good news. While we continue to see evidence suggesting that adolescent nicotine use may contribute to causing depression,²⁸⁹ researchers report no difference in either short-term (less than 3 months) or long-term cessation recovery rates (greater than 6 months) between smokers with a history of depression and those without.²⁹⁰

According to the U.S. National Institute of Mental Health (NIMH), we all occasionally feel sad or blue but normally such feelings pass within a couple of days. NIMH states that symptoms of depression may include persistent sadness, anxious or "empty" feelings, feelings of hopelessness and/or pessimism, feelings of guilt, worthlessness and/or helplessness, irritability, restlessness, loss of interest in activities or hobbies once pleasurable, including sex, fatigue and decreased energy, difficulty concentrating, remembering details and making decisions, insomnia, early-morning wakefulness, or excessive sleeping, overeating, or appetite loss, thoughts of suicide, suicide attempts, persistent aches or pains, headaches, cramps or digestive problems that do not ease even with treatment.²⁹¹

There are many types of depression and no one single cause. It likely results from a combination of factors including psychological, biochemical, environmental and genetic.

Sadness and depression are commonly seen in association with withdrawal from most addictive substances. During nicotine withdrawal, both temporary neuro-chemical desensitization and normal psychological emotional loss can give rise to sadness and depressive-type symptoms. But should moods fostered by a healing brain or due to normal and expected sadness be classified as clinical depression and mental illness?

289 Iñiguez SD, et al, [Nicotine Exposure During Adolescence Induces a Depression-Like State in Adulthood](#), *Neuropsychopharmacology*, December 17, 2008 [Epub ahead of print]; also see, Goodman E, et al, [Depressive symptoms and cigarette smoking among teens](#), *Pediatrics*, October 2000, Volume 106(4), Pages 748-755.

290 Hitsman B, et al, [History of depression and smoking cessation outcome: a meta-analysis](#), *Journal of Consulting and Clinical Psychology*, August 2003, Volume 71(4), Pages 657-663.

291 U.S. National Institute of Mental Health, [Depression](#), Internet article last reviewed April 3, 2008, accessed July 19, 2008.

“Probably not,” says a leading U.S. expert.

The American Psychiatric Association’s DSM-IV manual (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) provides standards for diagnosing depression. But even if a patient otherwise meets the criteria to be diagnosed with depression, they are excluded and denied the diagnosis if their depression is a normal reaction to the death of a loved one, or induced by alcohol or drug use.

So why exclude drug induced depression but not depression related to ending drug use? Why is it normal to experience depression related to the loss of a loved one, but not when the loss is associated with ending a long and intense chemical relationship?

Dr. Michael First is a physician and psychiatry professor at Columbia University Medical Center and was editor for the DSM-IV standards.²⁹² Dr. First did an interview with National Public Radio in April 2007, during which he discussed a new study he co-authored that sheds light on the question of whether or not the DSM-IV "bereavement exclusion" should extend to “other types of losses,” where it is normal to expect temporary depression to be seen.

“For some people a very messy divorce, a loss of a job, suddenly, those can be just as traumatic as the loss of a loved one,” said Dr. First. According to Dr. First, in order to fall under the “bereavement exclusion” for normal, expected and temporary depression, the depression has to “last less than two months and be relatively mild.” “For instance it would not include symptoms such as suicidal ideation or severe slowing down in the way you talk. So it was a mild version of depression that occurred following a loss such as divorce and other things like that.”²⁹³

Dr. First’s new study, which reviewed a national mental health survey, was able to demonstrate that “25% of people who were diagnosed with major depressive disorder in the study looked just like the people who we would consider to have normal grief.”²⁹⁴ “So it really raises questions about whether or not these individuals should be considered normal in the same way someone who has normal grief would be considered normal.”

He was asked about treatment of those experiencing normal and expected sadness. “When a clinician makes a decision about whether to use psychotherapy or mediation or some combination, the severity of the symptoms play an important role,” he notes. “And certainly if someone is felt to have a normal reaction to the loss of a loved one or a stressful situation, probably the clinician would err on the side of being less aggressive with respect to treatment.”

292 Columbia University Medical Center, Department of Psychiatry, [Michael First MD, Faculty Profile](#), updated 2005, viewed July 24, 2008.

293 National Public Radio, All Things Considered, [The Clinical Definition of Depression May Change](#), April 3, 2007 www.npr.org

294 Wakefield JC, et al, [Extending the bereavement exclusion for major depression to other losses: evidence from the National Comorbidity Survey](#), Archives of General Psychiatry, April 2007, Volume 64(4), Pages 433-440.

Although normal sadness might benefit from medication, Dr. First reminded listeners that “medications have side effects” and any potential benefits must be weighed against them.

Recovery reflects an end to a long and intensely dependent chemical relationship. As the brain restores sensitivities physiological, psychological and emotional bonds are broken. Some degree of sense-of-loss sadness is common and expected. It can seem like the death of a friend or loved one, or the end of a destructive chemical relationship. It is normal to feel a sense of loss and normal to navigate grieving.

As with the end of any long-term relationship, the period of cessation mourning and grieving can be as long or short as we need. In the Ward "abstinence effects" study, 39% of smokers entering the study reported experiencing depression on the day prior to commencing recovery. By comparison, 19% of never-smokers in the control group were then experiencing depression.

The percentage of quitters experiencing depressive type symptoms peaked at 53% on day three, and fell to 33% (6 points below their starting baseline) by day seven. Amazingly, only 20% of ex-smokers were reporting depressive-type symptoms by day twenty-eight, just one percentage point above the rate of non-smokers in the control group.²⁹⁵

It was once thought that those with depression smoked in order to self-medicate. But new research is asking, "Which came first, nicotine addiction or depression."²⁹⁶ We now know that an escalating sense of depression is part of each low felt between each nicotine fix as escalating depression accompanied increasing anxiety and frustration. We know that youth who take up smoking report increased levels of anxiety, stress and depression, and have reports from adults who stop of "enduring mood improvements."²⁹⁷

Education and self-honesty may be the quickest means of putting any sense of loss blues behind us. We need to keep in mind that the real quitting took place when nicotine assumed control, when we lost the sense of normal that defined how and what we felt while interacting with life. This journey isn't about quitting. It's about recovering the real us.

We should also note that some nicotine users suffer from underlying organic depression that is both chronic and significant. Some may not sense improvement when quitting and may actually feel worse. The problem is in recognizing the difference between depression associated with a sense of loss, which is normal, expected and will soon pass, and possible chronic organic depression, that to some degree may have been partially masked by nicotine use and now needs treatment. But how do we tell the difference?

295 Ward, MM et al, [Self-reported abstinence effects in the first month after smoking cessation](#), Addictive Behaviors, May-June 2001, Volume 26(3), Pages 311-327.

296 Xu Z, et al, [Adolescent nicotine administration alters serotonin receptors and cell signaling mediated through adenylyl cyclase](#), Brain Research, October 4, 2002, Volume 951(2), Pages 280-292.

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

Self-diagnoses can be dangerous. The best advice I can give is that if you sense you are experiencing depression that isn't lifting, or your family is noticing mood changes, get seen and evaluated as soon as possible by your medical provider or at the nearest emergency medical facility. A physician's depression treatment resources include scores of non-nicotine and non-addictive medications, including Wellbutrin (whose active chemical is bupropion), which is marketed as the quit smoking medication Zyban.

Although long-term results from real-world quitting method surveys that have included Zyban have found those quitting without it actually do better than those using it,²⁹⁸ including a 2006 survey by the U.S. National Cancer Institute,²⁹⁹ it doesn't mean that bupropion does not benefit those experiencing depression.

I also want to briefly mention varenicline, which is marketed in the U.S. as Chantix and elsewhere as Champix. Although we have no reported case or medical journal article discussing any cold turkey quitter having ever attempted suicide, on April 1, 2008 the U.S. Food and Drug Administration reported that:

“Chantix has been linked to serious neuropsychiatric problems, including changes in behavior, agitation, depressed mood, suicidal ideation and suicide. The drug may cause an existing psychiatric illness to worsen, or an old psychiatric illness to recur. The symptoms may occur even after the drug is discontinued.”³⁰⁰

I mention varenicline for two reasons. First, in arguments intended to help salvage varenicline from the FDA recall chopping block, Pfizer (the pharmaceutical company marketing varenicline) has come dangerously close to suggesting that depression in cold turkey quitters can become so great that they too commit suicide.

Varenicline is what's termed a partial agonist. It stimulates dopamine pathways via the exact same $\alpha 4\beta 2$ -type acetylcholine receptors that nicotine would have occupied, while at the same time blocking nicotine's ability to occupy the receptor and induce stimulation.³⁰¹ But receptor stimulation by varenicline is significantly less than with nicotine (35 to 60%).³⁰² This reduced level of stimulation may be insufficient to keep some having certain pre-existing underlying disorders (such as depression or other mental health disorders) from experiencing the onset of serious depression and behavioral changes. Remember, varenicline not only blocks nicotine from stimulating dopamine pathways but

298 Doran CM, et al, [Smoking status of Australian general practice patients and their attempts to quit](#), Addictive Behavior, May 2006, Volume 31(5), Pages 758-766, also see Ferguson J, et al, [The English smoking treatment services: one-year outcomes](#), Addiction, April 2005, Volume 100 Suppl 2, Pages 59-69 [see Table 6]

299 Unpublished 2006 U.S. National Cancer Institute Survey of 8,200 quitters, as reported in the [Wall Street Journal](#), Page A1, February 8, 2007

300 U.S. Food and Drug Administration, [FDA Patient Safety News, New Safety Warnings About Chantix](#), Show #74, April 2008

301 Pfizer, [Chantix Full Prescribing Information](#), May 2008, [www.Chantix.com](#)

302 Coe JW, et al, [Varenicline: an \$\alpha 4\beta 2\$ nicotinic receptor partial agonist for smoking cessation](#), Journal of Medicinal Chemistry, May 2005, Volume 48(10), Pages 3474-3477.

life as well.

The problem is that varenicline's elimination half-life is 24 hours.³⁰³ It means that even if the user realizes that the medication is affecting mood or behavior, that even if they stop now they'll only reduce its influence by half after a full day without it. So long as those pills keep arriving, it may be that for some small percentage of users, the only way they see to bring their suffering to an end is to contemplate ending life itself.

The National Institute of Health maintains the www.PubMed.gov website, which indexes and allows searching of the summaries (abstracts) of nearly all medical journal articles and studies. A July 2008 search of the term "smoking cessation" returned 15,317 studies, while a search of "suicide" located 46,165 studies. But when the two terms were combined into a single search ("smoking cessation" suicide), the only results focusing upon quitting and suicide were associated with quitting medications.

Why isn't there any medical journal article documenting that any cold turkey quitter has ever attempted suicide? We can only speculate. What we do know is that no chemical such as varenicline, having a 24-hour elimination half-life, was blocking their a4b2 receptors. We know that they each had an alternative to continuing depression, that just one puff of nicotine and 8-10 seconds later they could steal the dopamine "aaah" that would induce relapse.

What we know for certain is that smokers attempt to break nicotine's grip upon their mind in order to save and extend their life, not end it. If feeling overwhelmed by feelings of depression and sadness get help immediately, at the nearest emergency medical facility if necessary. Given proper treatment, there is absolutely no reason why anyone with a mental health condition cannot break free from nicotine too.

Loneliness or feeling cooped up - Akin to the "sense of loss" felt with depression, loneliness is natural anytime we leave behind a long-term companion, even if a super-toxin. It's time we gifted ourselves a new companion, a healing and healthier "us!"

Climb from the deep, deep rut we once called home and taste the flavor of nicotine-free life.

Many of us smokers severely limited the activities we were willing to engage in, either because they either were too long or interfered with our ability to smoke nicotine, or because our body could not muster the stamina needed, due to carbon monoxide's four-hour half-life robbing our blood of the ability to receive and transport oxygen.

Lonely? Get to know the gradually emerging you. Climb from the ditch, alter your outlook and head in directions once avoided. Push your body a bit harder than normal and sample the healing within. One of the most fascinating aspects of recovery is exploring life as an ex-user. Climb out, look around, sample and enjoy.

303 Pfizer, [Chantix Full Prescribing Information](#), May 2008, www.Chantix.com

Increased appetite, hunger, and weight gain - It's easy to attribute a newfound desire to consume large quantities of additional food to our rapidly healing taste buds and revived sense of smell. Many reach for extra calories and probably for a combination of reasons. Additional food can serve as a hand-to-mouth oral crutch used to replace primarily cigarettes but also oral tobacco and NRT. Some seek to replace missing nicotine induced dopamine "aaah" sensations with dopamine "aaah"s from extra food.

Others have yet to re-learn to properly fuel their body now that nicotine is no longer their spoon. They seemingly try to eat their way out of hunger pains or food cravings. Some admit to consuming large quantities of extra food in an attempt to intentionally gain extra weight, in order to create what they believe will be easily acceptable relapse excuse for them or their loved ones. A few do all of the above.

The foundation of our dependency was a nicotine-induced flood of unearned and stolen dopamine. But as most of us realize, the "aaah" from anticipating or eating food is extremely short lived. It required us to eat chip after chip, or cookie after cookie to keep the "aaah"s coming. Regardless of our motivation for taking extra bites, we need to be mindful that short-lived bursts of food-stimulated dopamine can quickly become a destructive crutch with potential to drink recovery's dreams and desires dry.

Yes, significant weight gain can gradually destroy motivations to the point of making a 50% chance of losing 14 years of life look more appealing to the recovering ex-smoker than that next extra pound. If we should find ourselves reaching for food as a temporary early oral substitute (which is NOT recommended), reach for healthy, low calorie foods like fresh vegetables.

Even without extra food, it is common to see 3 to 5 pounds of weight gain during the first week due to water retention associated with physiological changes.³⁰⁴ If so, we should see water retention return to normal within two weeks.

While true that minor metabolism changes can account for a few extra unburned calories each day (a slower beating heart) they can be easily offset by enhanced cardiovascular abilities resulting from healing that includes a significant increase in overall lung function. Not smoking or using oral nicotine does not cause weight gain, eating does.

Many of us smoked or used oral nicotine to mark the end of meals. It was a conditioned signal to our brain that eating was over, our meal complete. Upon cessation, this cue no longer exists. Its absence may lead to continued eating after our normal meal would have ended. We may need to find a new cue that our meal is over. A toothpick, walk, brushing our teeth, doing the dishes, a stick of sugarless gum, or even a nice extra deep breath may be all it takes.

304 National Institutes of Health, [You Can Control Your Weight as You Quit Smoking](http://www.pueblo.gsa.gov/cic_text/health/w8quit-smoke/#1), NIDDK, Federal Citizen Information Center of the U.S. General Services Administration, web page visited August 26, 2008 - http://www.pueblo.gsa.gov/cic_text/health/w8quit-smoke/#1

I encourage you to accept early on that should some weight gain occur that the extra pounds are acceptable. Remember, it would take gaining at least an extra 75 pounds during recovery in order to equal the health risk associated with smoking 20 cigarettes a day. Would we rather be a bit bigger and alive or a bit smaller but dead? Is life worth a few temporary extra pounds? Absolutely. There will be plenty of time later to shed them, and if you were a smoker, the benefits of enhanced physical endurance will increase your ability to do so.

Trouble sleeping or insomnia - Nicotine is a nervous system stimulant known to affect subconscious thought. Some evidence suggests it alters EEG monitored brain waves during sleep,³⁰⁵ and diminishes the percentage of deep REM sleep (our high quality sleep) while increasing REM dream imagery.³⁰⁶

Our sleep's sense of "nicotine normal" becomes completely disrupted and "sleep fragmentation" is not unusual. Gradually, new or pre-nicotine sleep patterns will emerge. Over time we may find that we don't need nearly as much sleep as we did while using nicotine, or we may find that our body requires more.

Take a close look at caffeine intake if sleep is disrupted. Nicotine somehow doubles the rate by which the body eliminates caffeine.³⁰⁷ During recovery, with no nicotine in the bloodstream to accelerate caffeine elimination, if we continue to consume the same amount of caffeine, we should expect to find twice as much caffeine circulating in our bloodstream.

If you normally drink a cola prior to bed imagine drinking two and how the additional caffeine might affect your ability to sleep. If we can handle doubling our caffeine intake without disrupting sleep then this isn't an issue. But if not, or if a heavy user, consider a reduction of up to one-half of normal caffeine intake to avoid over-stimulation.

Relaxation through mind clearing and slow deliberate breathing can help induce sleep. Mental relaxation can be as simple as slowly clearing our mind of all other thoughts by focusing exclusively on a single object or color. If sleep continues to be fragmented or is affecting your health, safety or performance, turn to your physician or pharmacist for assistance. There are many sleeping aids available. Don't allow sleep disruption to become another lame excuse to sabotage recovery and destroy your freedom.

Chest tightness - Although rarely mentioned in symptom studies, it isn't unusual to hear chest tightness complaints from quitters. Whether arising from tension, stress, depression or somehow related to coughing, lung healing, or lung disease, be careful as

305 Zhang L, [Power spectral analysis of EEG activity during sleep in cigarette smokers](#), Chest, February 2008, Volume 133(2), Pages 427-432.

306 Page F et al, [The effect of transdermal nicotine patches on sleep and dreams](#), Physiology and Behavior, July 2006, Volume 30;88(4-5), Pages 425-432; also see Underner M et al, [Cigarette smoking and sleep disturbance](#) (article in French), Rev Mal Respir. June 2006, Volume 23(3 Suppl), Pages 6S67-6S77.

307 Swanson JA, et al, [The impact of caffeine use on tobacco cessation and withdrawal](#), Addictive Behavior, Jan-Feb 1997, Volume 22(1), Pages 55-68.

chest tightness can also be a sign of more serious health problems, including serious heart conditions. If at all concerned, pick up the phone and contact your doctor.

If related to anxiety or tension, it may benefit from relaxation exercises, a warm shower, slow deliberate breathing or moderate exercise.

Slightly sore mouth or throat - Study results are mixed on whether recovery actually causes sore throats. Years of tobacco use clearly damaged and irritated tissues. Powerful toxins numbed them to tobacco's daily assaults. As tissues re-sensitize and heal they may feel temporarily irritated. If so, ice or cool liquids may provide soothing and cough drops may generate moisture and temporary relief from minor discomfort. But as a site of other more serious diseases, if mouth or throat pain or discomfort persists, the smart move is to get seen and have it medically evaluated.

Coughing, mucus or nasal drip - According to the Ward study roughly 60% in recovery reported coughing on day two, 48% by day seven, 33% by day fourteen, and 15% by day twenty-eight.³⁰⁸ Consider making an appointment to have a thorough check-up if still coughing after having stopped smoking for one month. A chronic cough can be a warning sign of disease, including lung cancer. A thorough examination that includes a simple chest x-ray can bring piece of mind. Get seen immediately should a cough ever produce blood in sputum.

Cilia are microscopic hair-like projections that line nasal passages, our windpipe (trachea) and bronchial tubes. Cilia inside lung bronchial tubes linking air sacs (alveoli) to our windpipe oscillate in unison at a rate between 5 to 11 cycles per second.³⁰⁹ They act as a wave-like broom or slow moving carpet that sweeps secreted mucus, containing trapped contaminants, up and out of our lungs.³¹⁰

Tobacco toxins inflict extreme damage on and near total destruction of a smoker's cilia. It results in roughly 50% developing a chronic cough (chronic bronchitis), as inflamed bronchial tubes and lungs fight to expel trapped mucus containing pathogens, toxins and particulate.

The good news is that within three days of commencing recovery our cilia begin regenerating and within six months have fully recovered.³¹¹ They will soon be engaged in cleaning and clearing gunk from the lungs. Years of tar build-up are loosening. Some will be spit out in phlegm or mucus but most will be swallowed. Mucus and coughing are common, yet according to the Ward study many experience neither.

308 Ward, MM et al, [Self-reported abstinence effects in the first month after smoking cessation](#), Addictive Behaviors, May-June 2001, Volume 26(3), Pages 311-327.

309 Selwyn DA, et al, [A perfusion system for in vitro measurement of human cilia beat frequency](#), British Journal of Anaesthesia, January 1996, Volume 76(1), Pages 111-115 [4.6 cycles per second]; also see, Clary-Meinesz C, et al, [Ciliary beat frequency in human bronchi and bronchioles](#), Chest, March 1997, Volume 111(3), Pages 692-697 [11 cycles per second].

310 Stannard W, [Ciliary function and the role of cilia in clearance](#), Journal of Aerosol Medicine, Spring 2006, Volume 19(1), Pages 110-1155.

311 Spitzer, J, [Smoking's Impact on the Lungs](#), 2001, WhyQuit.com, Joel's Library.

Clearly our lungs will benefit from fluids to aid with cleansing and healing. Although the “8 x 8” water drinking rule is under attack for not having any studies to back it (drinking 8 ounces of water 8 times daily),³¹² as often said, “absence of evidence is not evidence of absence.”

Ice can sooth and moisten healing tissues. Cough syrups or decongestants may also bring temporary relief from coughing or irritation. But don't hesitate to get seen should your cough persist.

Although destroyed air sacs can never be replaced, those not yet destroyed clean up nicely. It isn't uncommon to see a significant increase in lung function within 6 months.³¹³ I couldn't run 200 feet prior to quitting and truly thought I would never do so again. I did not discover the extent of my lung healing until I looked up the street and saw my dog out of our yard, in the street and threatened by an approaching car.

Advised that I have early emphysema, it isn't like I'm some big runner now. I'm like Joel, I'm a bicycle rider. But I do run-walk a few hundred feet at a time now and then and I'm not nearly as winded when the running stops and the walking phases starts. I thought I'd damaged these lungs beyond repair. Clearly the tissues and capacities I didn't destroy have cleaned up rather well. Sometimes it's nice being wrong.

Bad breath and nasty tastes - Healing senses of smell and taste may find it hard not to notice horrible odors and tastes rising-up from healing lungs or oozing from tobacco marinated gums and mouth tissues. Guess what? This is what it was like inside your mouth while still using but your senses were so dulled by tobacco toxins that they couldn't notice.

Picture layer after layer of cells slowing dying and being replaced. Depending upon how long, frequently and intensely we used tobacco it could take some time for these tastes and odors to fully dissipate. Continued healing, time, oxygen rich blood, and fluids will keep mouth, nasal, throat and respiratory tissues on the road to maximum recovery. Brushing a bit more frequently and mouthwash should help control any odors released from slowly healing tissues.

Bleeding gums - Gum bleeding is not unusual during recovery. Aside from the impact of brisk brushing that attempts to whiten tar stained teeth, our gums are feeling the impact of tobacco and nicotine-free living too. Surprisingly, like never-users, the ex-user's gums are more prone to bleeding, not less.

Nicotine is a vasoconstrictor that actually constricts and diminishes blood flow. It's

312 Valtin H, "[Drink at least eight glasses of water a day.](#)" Really? Is there scientific evidence for "8 x 8"? American Journal of Regulatory, Integrative and Comparative Physiology, November 2002 Nov, Volume 283(5), Pages R993-1004.

313 Buist AS, [The effect of smoking cessation and modification on lung function](#), The American Review of Respiratory Disease, July 1976, Volume 114(1), Pages 115-122.

thought that this may account for smokers having thicker gum tissues.³¹⁴ According to a 2004 study, gingival (gum) blood flow rate was "significantly higher at 3 days" into recovery. Within 5 days the liquid sticky plasma proteins normally released by healthy gums had significantly increased and within 2 weeks were comparable to those of non-smokers.³¹⁵

But if it takes a bit of bleeding to begin gradually reversing the risk of experiencing 240% greater tooth loss than a non-smoker,³¹⁶ so be it. Call your dentist if at all concerned about gum bleeding.

Headaches - No study has yet identified headaches as a significant recovery concern. While the Ward study notes a slight day-three increase, it also provides evidence that recovery may actually reduce headaches. It found that 33% of smokers reported having headaches immediately prior to recovery. Interestingly, those reporting headaches peaked on day three (72 hours) at 44%, dropped to 17% on day seven, and declined to a low of just 11% by day fourteen.³¹⁷

Ward's finding of greater incidence of headaches in active smokers is supported by other studies, which suggest nicotine, a known vasoconstrictor, as a primary culprit.³¹⁸ Vasoconstriction is the narrowing of blood vessels with restriction or slowing of blood flow, caused by contraction of the vessel's muscular wall.³¹⁹

But nicotine's arrival has ended and brain blood-oxygen and carbon monoxide levels have returned to normal within twelve hours of commencing recovery. Should a day three headache occur, keep in mind that according to the U.S. National Institutes of Health, "the most common type of headache is a tension headache. Tension headaches may be due to tight muscles in our shoulders, neck, scalp and jaw. They are often related to stress, depression or anxiety."³²⁰

Relaxation and slow deep breathing, rest, mind clearing with thought focusing exercises, a warm bath or shower, or physical exercise may help relieve tensions and bring relief. Aspirin and a host of other over-the-counter headache medications are available.

314 Villar CC et al, [Smoking influences on the thickness of marginal gingival epithelium](#), Pesqui Odontol Bras. Jan-March 2003, Volume 17(1), Pages 41-45.

315 Morozumi T et al, [Smoking cessation increases gingival blood flow and gingival crevicular fluid](#), Journal of Clinical Periodontology, April 2004, Volume 31(4), Pages 267-272.

316 Krall EA, [Smoking, smoking cessation, and tooth loss](#), Journal of Dental Research, October 1997, Volume 76(10), Pages 1653-1659.

317 Ward, MM et al, [Self-reported abstinence effects in the first month after smoking cessation](#), Addictive Behaviors, May-June 2001, Volume 26(3), Pages 311-327.

318 Payne TJ, [The impact of cigarette smoking on headache activity in headache patients](#), Headache, May 1991, Volume 31(5), Pages 329-332.

319 National Institutes of Health and U.S. National Library of Medicine, [Vasoconstriction](#), Medline Plus, Medical Encyclopedia, web page updated January 22, 2007, <http://nlm.nih.gov/MEDLINEPLUS/ency/article/002338.htm>

320 National Institutes of Health and U.S. National Library of Medicine, [Headache](#), Medline Plus, Medical Encyclopedia, web page updated July 18, 2008, <http://www.nlm.nih.gov/medlineplus/headache.html>

Nausea - Nausea is “an uneasy or unsettled feeling in the stomach together with an urge to vomit. Usually it isn’t serious and benefits by avoiding solid foods for at least six hours.”³²¹

Nausea usually is not identified as a recovery symptom,³²² except in association with use of cessation medications such as varenicline (Chantix or Champix), which was recently found to cause nausea in 37% of users.³²³ The lone exception appears to be the Ward study which found that while 16% reported nausea on day one (as compared to 2% at pre-cessation baseline), the rate dropped to 11% on day three, 16% on day seven, 9% at two weeks, and 4% on day twenty-eight.

Constipation - Constipation can, but need not, become a factor motivating relapse. A 2003 study found that one in six new ex-smokers developed constipation and that in one in eleven the problem became severe (“very or extremely constipated”). It found that constipation levels peaked at about two weeks.³²⁴

According to a 2006 study, nicotine interacts with digestive tract smooth muscle contractions (peristalsis). The digestive system needs time to adjust to functioning naturally without it. But constipation is correctable and we need not suffer. The article indicates that “magnesium salts are the first-line treatment for this problem. If they fail, neostigmine, an anticholinesterase with parasympathomimetic activity, appears remarkably effective in correcting this disorder.”³²⁵

Aside from adjusting to nicotine’s absence, what other factors contribute to constipation? According to the U.S. National Institutes of Health (NIH) “the most common causes of constipation are poor diet and lack of exercise.” Regarding diet, it’s caused by “a diet low in fiber or a diet high in fats, such as cheese, eggs, and meats.”³²⁶ Aside from more fiber, less fats and increased activity, the NIH recommends plenty of water, juice or other liquids free of alcohol and caffeine, which may worsen constipation. “Liquids add fluid to the colon and bulk to stools, making bowel movements softer and easier to pass.”

“As food moves through the colon, the colon absorbs water from the food while it forms waste products, or stool,” explains NIH. “Muscle contractions in the colon then push the

321 National Institutes of Health and U.S. National Library of Medicine, [Nausea and Vomiting](http://www.nlm.nih.gov/medlineplus/nauseaandvomiting.html), Medline Plus, Medical Encyclopedia, web page updated July 28, 2008, <http://www.nlm.nih.gov/medlineplus/nauseaandvomiting.html>

322 Hughes, JR, [Effects of abstinence from tobacco: Valid symptoms and time course](#), Nicotine & Tobacco Research, March 2007, Volume 9(3), Pages 3215-327.

323 Aubin HJ, et al, [Varenicline versus transdermal nicotine patch for smoking cessation: results from a randomised open-label trial](#), Thorax, August 2008, Volume 63(8), Pages 717-724.

324 Hajek P, et al, [Stopping smoking can cause constipation](#), Addiction, November 2003, Volume 98(11), Pages 1563-1567.

325 Lagrue G, et al, [Stopping smoking and constipation](#), [Article in French], Presse Medicale, February 2006, Volume 35(2 Pt 1), Pages 246-248.

326 National Institutes of Health, [Constipation](http://digestive.niddk.nih.gov/ddiseases/pubs/constipation/), NIDDK, NIH Publication No. 07-2754, July 2007, <http://digestive.niddk.nih.gov/ddiseases/pubs/constipation/>

stool toward the rectum. By the time stool reaches the rectum it is solid, because most of the water has been absorbed.”

“Constipation occurs when the colon absorbs too much water or if the colon’s muscle contractions are slow or sluggish, causing the stool to move through the colon too slowly. As a result, stools can become hard and dry,” writes NIH.

Why extra fiber? “Fiber is the part of fruits, vegetables, and grains that the body cannot digest,” says NIH. “Soluble fiber dissolves easily in water and takes on a soft, gel-like texture in the intestines. Insoluble fiber passes through the intestines almost unchanged. The bulk and soft texture of fiber help prevent hard, dry stools that are difficult to pass.”

NIH defines “constipation” as “having a bowel movement fewer than three times per week.”

According to NIH, “some people think they are constipated if they do not have a bowel movement every day. However, normal stool elimination may be three times a day or three times a week, depending on the person.” Consult your physician or pharmacist and obtain relief should constipation concerns arise.

Physical fatigue not a symptom - The majority of studies conclude that physical fatigue is not a normal withdrawal symptom.³²⁷ In fact, exercise induced fatigue has been found to be a symptom of smoking.³²⁸

The body is shedding the effects of years of dependence upon a stimulant. If anything, the body is working less not more. We experience a metabolism reduction. Our heart beats slower, our breathing becomes shallower and our body is no longer feeling the effects of, and working to expel, an endless stream of arriving toxins.

While early recovery may leave us feeling emotionally drained, physically we should soon be feeling much better with more energy than we’ve felt in years. It is not normal to feel physically tired or fatigued. If it occurs, get seen and find out why.

Possible Medication Adjustments

As noted, tobacco, both oral and smoked, contains thousands of chemicals, some of which may have interacted with medications we were taking. “Often when people quit smoking they may find that medications that were adjusted for them while smoking may be altered in effectiveness,” writes Joel.³²⁹ “People on hypertensives, thyroid, depression, blood sugar drugs, and others may need to get re-evaluated for proper dosages.”

“The first few days, it can be difficult telling the difference between ‘normal’ withdrawal

327 Hughes, JR, [Effects of abstinence from tobacco: Valid symptoms and time course](#), Nicotine & Tobacco Research, March 2007, Volume 9(3), Pages 3215-327.

328 Hughes JR, et al, [Physical activity, smoking, and exercise-induced fatigue](#), Journal of Behavioral Medicine, June 1984, Volume 7(2), Pages 217-230.

329 Spitzer, J, [Medication Adjustments](#), July 19, 2001, <http://www.ffn.yuku.com/topic/23017>

symptoms and medication dosage issues,” notes Joel. “But once through the first few days, if a person who is on medications for medical disorders finds him or herself having physical symptoms that just seem out of the ordinary, he or she should speak to the doctor who has him or her on the medications. Point out to the doctor that you have recently quit smoking and started to notice the specific symptoms just after quitting and that they haven't improved over time.”

Don't think only in terms of new symptoms. Old symptoms can disappear. During a 2008 question and answer session before roughly 200 inmates at a woman's prison that had recently gone tobacco-free, one lady in the back raised her hand. “Yes, your question,” I asked. “I don't have a question but a comment,” she replied. “I knew this policy change was coming and I quit a month ago. At the time, I was on eight different medications for my heart, blood pressure, hypertension, cholesterol and breathing. Now I'm down to just two.” A big cheer went up.

Key to quality and effective medical treatment is effective communication between patient and physician. Be sure to accurately describe any symptoms, when they were first felt, how frequently they occur, how long they last, what aggravates them and the medications you've been taking. A complete picture will greatly aid our doctor in determining whether there is a need to increase, decrease, change or discontinue medications.

Possible Underlying Hidden Conditions

Stay alert for the possibility of medical conditions that were being masked and hidden by our dependency. Oral tobacco users bring more than 2,550 chemicals into their body.³³⁰ Burning cigarettes give off more than 4,000. A mini-pharmacy, they are capable of hiding a host of medical conditions, including those which may have been caused by tobacco use, Let's take a closer look at one that if it should occur, could be noticed within the first 72 hours, difficulty breathing.

“Why am I having trouble breathing?”

“It's like I need to keep breathing in deep, breath after breath after breath.”

Rarely a day passes in overseeing our Internet sites (WhyQuit and Freedom) without arrival of an email inviting us to play Internet doctor. Although well intended, I am a cessation educator who teaches recovery, including symptom possibilities. I am not a trained and skilled physician, qualified to evaluate, diagnose and treat actual conditions. Even though the symptom being described may sound like normal recovery, how could I possibly know the actual cause? I'd be guessing.

Difficulty breathing or shortness of breath is not normal. Still, concerns such as this are not uncommon. When I receive them, my initial thoughts are outrage and sadness, that

330 U.S. Surgeon General, [Reducing the Health Consequences of Smoking: 25 Years of Progress: A Report of the Surgeon General: 1989](#), Page 79.

this person probably has a breathing disorder that tobacco industry cigarette engineering kept hidden from them, a disorder that was likely caused by years of smoking. But again, I'd just be guessing. Instead, I tell them it isn't normal, that they need to get seen by a doctor as soon as possible.

How wrong and damaging could guessing be? Shortness of breath can be caused by “lung disease, asthma, emphysema, coronary artery disease, heart attack (myocardial infarction), interstitial lung disease, pneumonia, pulmonary hypertension, rapid ascent to high altitudes, with less oxygen in the air, airway obstruction, inhalation of a foreign object, dust-laden environment, allergies (such as to mold, dander, or pollen), congestive heart failure (CHF), heart arrhythmias, de-conditioning (lack of exercise), obesity, compression of the chest wall, panic attacks, hiatal hernia, or gastroesophageal reflux disease (GERD).³³¹

Hidden conditions aside, what are the odds of someone in the first few days of recovery developing pneumonia or noticing a hiatal hernia? Probably pretty small. But never-users develop hernias too. They also catch colds, the flu and get sick. Keep in mind that coincidental illnesses and condition could happen during recovery have nothing to do with it.

How might cigarette engineering contribute toward hiding symptoms of early asthma or emphysema? Although disputed by the tobacco industry, it is reported that cocoa may cause cigarette smoke to act as a breathing nebulizer.³³² A chemical within cocoa, theobromine, is known to relax airway muscles and expand bronchial tubes. It is suggested that this might allow more nicotine-laden smoke to penetrate deeper and faster, resulting in a bigger hit or bolus of nicotine assaulting brain dopamine pathways sooner. In theory, this could keep the user loyal to their brand and coming back for more.

According to Philip Morris, maximum concentrations of cocoa can be up to 5%. Theobromine within cocoa accounts for 2.6% of its weight. If a cigarette contains 5% cocoa it also contains up to 1 milligram of theobromine.³³³

The tobacco industry knows that cigarette smoking constricts lung bronchial tubes,³³⁴ that theobromine relaxes bronchial muscles, and that in competition against theophylline, a chemical used in breathing nebulizers, theobromine compared favorably in improving breathing in young asthma patients.³³⁵ But Philip Morris argues that it is “unlikely”

331 National Institutes of Health and U.S. National Library of Medicine, [Breathing difficulty](http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm), Medline Plus, Medical Encyclopedia, web page updated April 12, 2007, <http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm>

332 ASH, [Tobacco Additives, cigarette engineering and nicotine addiction](http://old.ash.org.uk/html/regulation/html/additives.html), July 14, 1999, <http://old.ash.org.uk/html/regulation/html/additives.html>; as brought to my attention by Schwartz, L, “[I'm an ADDICT! Hooray!](http://www.ffn.yuku.com/topic/115)” March 2, 2002, <http://www.ffn.yuku.com/topic/115>

333 Philip Morris USA, [TMA Presentation on Cocoa to the Department of Health, Carmines](http://www.philipmorris.com/pressroom/pressreleases/2000/10/18/2505520057), October 18, 1999, Bates #2505520057

334 Hartiala J, et al, [Cigarette smoke-induced bronchoconstriction in dogs: vagal and extravagal mechanisms](http://www.physiology.org/doi/abs/10.1152/jap.1984.57.4.1261), Journal of Applied Physiology, October 1984, Pages 1261-1270.

335 Simons FE, [The bronchodilator effect and pharmacokinetics of theobromine in young patients with asthma](http://www.jacionline.org/article/S0091-2296(85)70307-7), The Journal of Allergy and Clinical Immunology, November 1985, Volume 76(5), Pages 703-077.

theobromine in cocoa added to cigarettes can produce “a clinically effective dose.”³³⁶

Once secret industry documents evidence ongoing industry monitoring of both cigarette cocoa and licorice extract levels for at least three decades. Licorice extract contains glycyrrhizin which some contend is another means by which cigarettes act as bronchodilators. But Philip Morris says its research shows that licorice extract is “pyrolyzed extensively” (decomposed due to heat), by the up to 900-degree temperatures found in cigarettes.³³⁷

Although additives have likely changed significantly since, a 1979 Brown & Williamson report documents that cigarette brands then containing more than 0.5% cocoa included: Belair, Benson & Hedges, Camel Lights, Doral, Kool Super Lights, Marlboro Lights, Merit, Now, Salem Lights, Tareyton Lights, Vantage, Viceroy Lights and Winston Lights. Brands then containing more than 0.5% licorice included: Belair, Benson & Hedges, Camel Lights, Marlboro Lights, Merit, Parliament, Pall Mall Lights, Salem Lights, Tareyton Lights, Vantage, Viceroy Lights and Winston Lights.³³⁸

Other possible once hidden health conditions include thyroid problems masked by tobacco iodine,³³⁹ chronic depression masked by nicotine,³⁴⁰ and ulcerative colitis, possibly also somehow suppressed, hidden or controlled by nicotine.³⁴¹ Remember, nicotine is not medicine. It is a natural poison.

Celebrating Two Weeks of Healing!

The beauty of two weeks is that while recovery is still ongoing, our physical addiction is no longer doing the talking. We’ve traveled far enough to begin sampling what it will be like arriving home. The number of minutes each day, during which we do not entertain thoughts of wanting to bring nicotine into our body, are beginning to grow.

The body and mind are nicotine-free, nearly all recovery symptoms are now behind us, the vast majority of subconscious use cues have been extinguished and we are now focusing more on the final leg of recovery, overcoming the influence of years and piles of use rationalizations and memories associated with them.

336 Philip Morris USA, [TMA Presentation on Cocoa to the Department of Health, Carmines](#), October 18, 1999, Bates #2505520057

337 Carmines EL, [Toxicologic evaluation of licorice extract as a cigarette ingredient, Food and Chemical Toxicology](#), September 2005, Volume 43(9), Pages 1303-1322.

338 Brown & Williamson Tobacco Corporation, [Cocoa & Licorice Contents of Competitive Hi-Fi Cigarettes](#), June 12, 1979, Bates #680224319

339 Vejbjerg P, [The impact of smoking on thyroid volume and function in relation to a shift towards iodine sufficiency](#), *European Journal of Epidemiology*, 2008, Volume 23(6), Pages 423-429.

340 Covey LS, et al, [Major depression following smoking cessation](#), *American Journal of Psychiatry*, February 1997, Volume 154(2), Pages 263-265.

341 Lakatos PL, et al, [Smoking in inflammatory bowel diseases: good, bad or ugly?](#) *World Journal of Gastroenterology*, December 14, 2007, Volume 13(46), Pages 6134-6139.

Our body has adjusted to functioning without nicotine and we're standing on our own two feet. Whether measurable or not, whether appreciated or not, with each passing day the challenges continue to grow fewer, generally less intense and shorter in duration. Be proud of yourself. You've come far and invested much. Remember, there is absolutely no guarantee that any of us could come this far again. Still just one rule ... no nicotine today!