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FUNCTIONAL & INTEGRATIVE PSYCHIATRY FOR

Antidepressant Withdrawal Syndrome

AN EBOOK EXPLORING THE CURRENT ANTIDEPRESSANT WITHDRAWAL CRISIS FACING MODERN PSYCHIATRY

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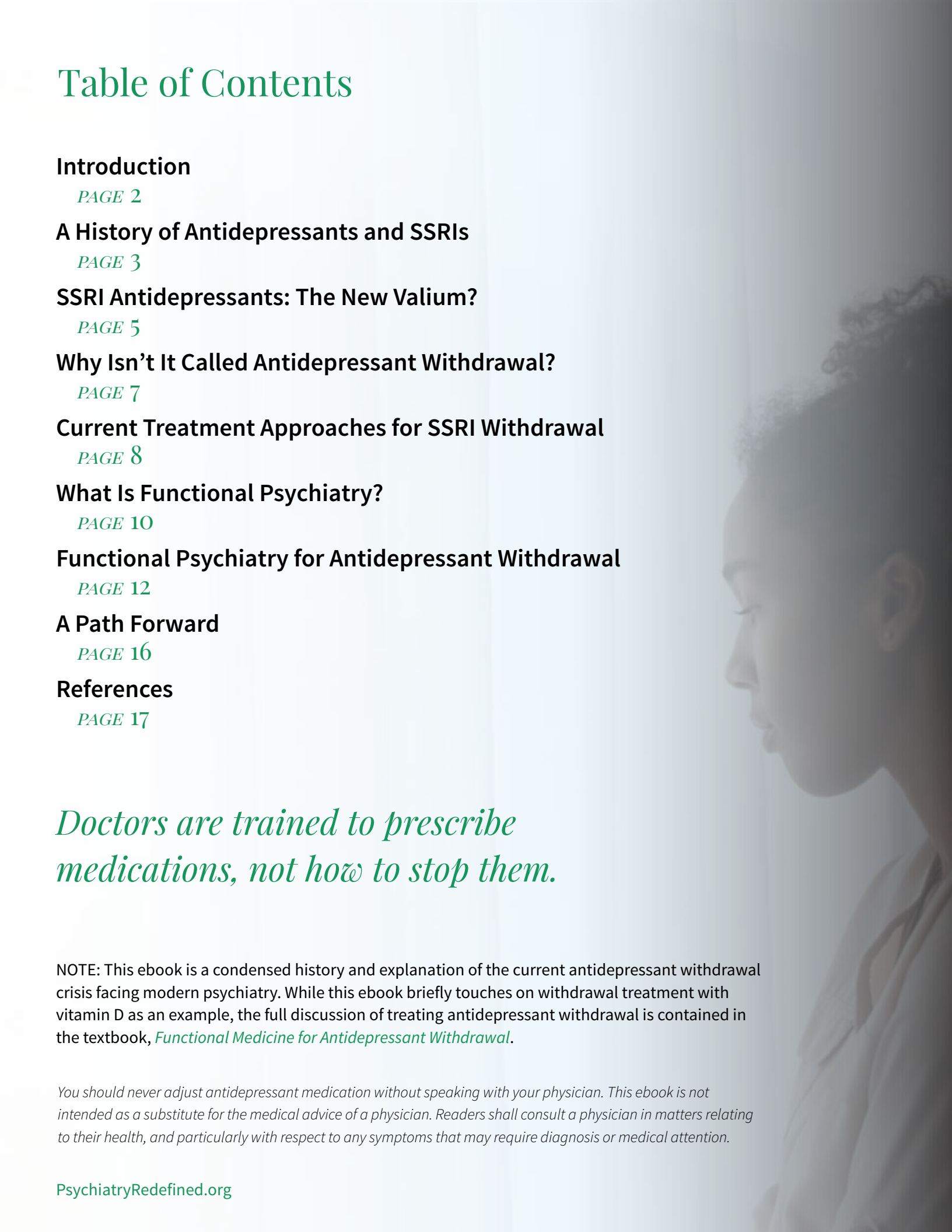


Doctors are trained to prescribe medications, not how to stop them.

NOTE: This ebook is a condensed history and explanation of the current antidepressant withdrawal crisis facing modern psychiatry. While this ebook briefly touches on withdrawal treatment with vitamin D as an example, the full discussion of treating antidepressant withdrawal is contained in the textbook, *Functional Medicine for Antidepressant Withdrawal*.

Introduction

I first started my medical training in 1981, eventually finishing a fellowship at *John Hopkins University School of Medicine* in Child and Adolescent Psychiatry and becoming an expert in psychopharmacology.

My training as a psychiatrist formed a deep-rooted appreciation for the complexity of human behavior, the neurochemistry that drives thoughts, feelings, and emotions, and the idea of a family's influence on emotional and mental wellness. My experience taught me to put heavy importance on the relationship between patient and provider, something that has seemingly gone by the wayside in the decades since. And over the course of my career, my interest in nutrition, biochemistry and genetics led me to a more personalized approach to treating patients through Functional Psychiatry.

As a system of mental health care, Functional Psychiatry honors the connections that link the mind and body and adheres to a model of personalized medicine based on genetic and biochemical individuality. Treatments are developed according to data derived from medical testing, analysis, and psychiatric assessment. These treatments address the underlying factors that contribute to mental health, including nutrition, inflammation, toxicity, chronic infections, hormones, neurotransmitters, and genetics. While medications can be part of Functional Psychiatry, they are rarely the sole treatment.

A Functional Psychiatry model prioritizes the treatment of nutritional deficiencies — deficiencies which I have found to be common among patients who suffer more severe antidepressant withdrawal symptoms. By reducing nutritional deficiencies identified through laboratory analysis, the implementation of a careful taper off antidepressants becomes easier, and far more comfortable for patients.

Over the last decade, scientific research has clearly established a relationship between nutritional deficits and brain function across every major psychiatric illness:

- Depression
- Schizophrenia
- ADHD
- Eating disorders
- Anxiety

Scientific evidence confirms robust associations between verifiable nutritional imbalances and the emergence and establishment of psychiatric symptoms. Mainstream treatment models in psychiatry, however, still fail to recognize nutritional imbalances as being factors in mental illness.

This needs to change.

The information in this ebook lays out the history and foundation of the problem of antidepressant withdrawal. From this initial foundation, I developed successful personalized treatment strategies that I have utilized for years for eliminating antidepressant withdrawal symptoms. I have successfully treated thousands of patients with this approach over the decades of my clinical experience.

In the vast majority of cases, addressing biochemistry, genetic makeup, diet, lifestyle, and relevant psychosocial variables yields far better outcomes for patients, and makes the idea of a lasting recovery an attainable goal.

I have seen far too many pattients over the years struggle, suffer, and fail as they seek to navigate antidepressant withdrawal. There is a way ftorward.

For patients and providers looking for more complete evaluation and treatment information, my full book on treating antidepressant withdrawal is available on Amazon for purchase here.

In Good Health,

James Greenblatt, MD
Founder & Medical Director, *Psychiatry Redefined*

A History of Antidepressants and SSRIs

Depression has been around since the first days of humanity, but it wasn't always treated as it is today. For centuries, if not millennia, doctors and researchers described depression as melancholia, a condition marked by consistently depressed moods and other physical complaints.

But as medicine evolved, so too did the idea of depression.

The very first antidepressants — the monoamine oxidase inhibitors, or MAOIs, which hit U.S. markets in the 1950s — were approached cautiously.[1] Early formulations like MAOIs and tricyclics were known to have numerous side effects and toxicity thresholds. As such, they were prescribed carefully, on a limited basis, and with strict monitoring regimens.[1]

By the 1960s, low neurotransmitter levels were hypothesized to be the main cause of depression.[2,3] The basic idea was that depression was caused by a lack of either serotonin or other neurotransmitters. And since antidepressant medication increased the availability of neurotransmitters in people, the medical industry assumed the drugs would help cure depression.

Simple, right?

But it gets more complicated. The concept of depression being a basic disorder with a straightforward cause and effect in the brain's chemistry proved to be a highly marketable idea.

Pharmaceutical companies were more than willing to advertise their medications as "cures" for neurotransmitter deficits.

However, as the march of research progress continued, it became increasingly clear that depression was far more complex than a simple lack of a few brain chemicals.[4]

Then Came Prozac

Prozac hit the market in 1988 amid a wave of hype and promising clinical trial statistics which sparked a huge change in popular opinion and medical standards. Not only was Prozac effective, said the drug manufacturers, but it was also safe, with a range of potential applications that extended beyond the treatment of clinical depression. It was the first of a new category of antidepressant medications: selective serotonin reuptake inhibitors (SSRIs).

It wasn't long before Prozac was being touted as a means to augment and even alter aspects of human personality:

- "Are you too shy? Prozac can help."
- "Do you need more ambition to reach that job promotion? Try Prozac to boost your motivation."

Prozac became a household term synonymous with a magic-bullet cure for personal failings. With the need for a legitimate therapeutic solution for depression as high as ever, and the lines between a simple medicine and a personality modifier beginning to blur, Prozac was touted as nothing less than a wonder pill in its early years of distribution.[5]

Psychiatry needed a miracle cure to revolutionize depression treatment, and Prozac seemed to be just that: an easy-to-take, hassle-free pill to finally become happy.

The notion of a wonder pill appealed to the public too. After all, if a single capsule could "wash away the blues" and give one's personality a bit of targeted improvement, there was no reason to question anything else.

Demand for antidepressant medications skyrocketed, and the long-term side effects and emerging withdrawal symptoms of Prozac and similar drugs went unrecognized and ignored.

Profit Over Health

While cultural hype did play a role in Prozac's meteoric rise to fame and popularity, the direct actions of the drug manufacturers were equally as significant. Pharmaceutical companies heavily promoted their research when they introduced new antidepressants to the market in the late 1980s and 1990s.

Their approach was wildly successful.

By 1990 Prozac was the country's most prescribed antidepressant, with annual sales exceeding one billion dollars.[5] But the good news didn't last forever, as cracks began to emerge in Prozac's carefully crafted image.

Previously stable individuals reported thoughts of violence and fantasies of killing themselves after starting the drug; others appeared on talk shows describing themselves as "Prozac survivors."[5]

Other people even noted — correctly — that antidepressants were being prescribed far too often, especially when considering science still lacked a complete understanding as to how the drugs worked, let alone the biology of depression itself.

Psychiatrists began to hear from patients that discontinuing antidepressants produced withdrawal symptoms that were often debilitating and prolonged.

Patients who tried stopping Prozac and related medicine reported dizziness, lightheadedness, paresthesia (a burning or tingling in the extremities), anxiety, gastrointestinal problems, a lack of coordination, headaches, insomnia, irritability, nausea, and tremors.

These symptoms bear a marked similarity to the withdrawal symptoms observed with benzodiazepine discontinuation.[6]

Understanding Depression

Fast forward to today, and neurotransmitters — particularly serotonin — are still presumed to play key roles in the development of depressive disorders. But with decades of more research, we now know the causes of depression are much more complex.

Among them, genetic, epigenetic, metabolic, and biochemical components have been implicated.[7] External factors have also been identified as influencing depression risk, meaning it's not simply genetic, but the environment we're raised and live in can affect us as well. [8-13]

Brain imaging and genetic assay technologies have evolved the biological model of depression at breakneck speed. You would think with all of the tremendous advancements in medical knowledge, we would've updated how we treat mental health.

And yet, when it comes to depression, the gap between understanding and practice has widened substantially.

Depression is still treated very much the same way it was fifty years ago, through medications thought to work by targeting neurotransmitter levels.

Currently, it's estimated that more than 264 million individuals worldwide struggle with depressive disorders.[14] Depression is also a leading cause of global disability and is on the rise, having jumped 14.3% between the years 2007 and 2017.[15,16]

So, how did mainstream psychiatry attempt to fix this problem?

By prescribing more pills, of course. From 2000 to 2011, most of the wealthiest nations in the world saw a doubling in usage of antidepressant medications.[17]

In all, the number of Americans taking antidepressant medications is simply staggering: 40 million Americans — one in eight individuals — filled a prescription for antidepressants in 2017 alone.[18]

Of these 40 million, 25% have been on an antidepressant for a decade or longer.

These are astounding numbers, and they are climbing.

Reports generated since the beginning of the COVID-19 pandemic indicate that more Americans than ever before are turning to antidepressants to calm their nerves and "wash away the blues."

Express Scripts, a pharmacy benefit manager owned by Cigna, reported that prescriptions for antidepressants rose 18.6% between February and March 2020, and psychiatrists working for a company that provides telehealth logistics services wrote 86% more prescriptions for mental health conditions (primarily antidepressants) in March and April of 2020 than they did in January or February 2020.[19]

In the middle of the greatest pandemic of a century, with people stressed, afraid, and worried about getting sick, more people than ever before turned to doctors for help with depression. And with the prescribed solution usually being an antidepressant that carries risks for severe withdrawal, more Americans than ever will experience and struggle with antidepressant withdrawal in the coming years.

SSRI Antidepressants: The New Valium?

A useful comparison can be drawn between SSRI antidepressants and Valium that sheds light on how the pharmaceutical industry and mainstream healthcare responded to the evidence of drug withdrawal.

Anxiety is nearly as big of a modern problem as depression: an estimated 260 million individuals suffer from anxiety disorders worldwide.[20] Valium (diazepam) was first released in the U.S. in 1963 as an improved version of older benzodiazepine formulations to treat anxiety.

Over two times more potent than its predecessors, this wonder pill quickly shot to the top of national drug sales lists, earning the rank of top-selling pharmaceutical in the United States from 1969 to 1982.[21] It was so wildly successful that other pharmaceutical companies quickly scrambled to invent competing versions, noting the huge opportunity for profits in a market that saw 2.3 billion Valium tablets sold in 1978.[21]

Throughout the 1970s, mass public and professional opinion were almost completely in favor of Valium despite breakthrough reports showing a potential for abuse of the drug. [21] Unfortunately, these early reports were mostly ignored.

In 1976, the chief of clinical pharmacology at Massachusetts General Hospital was quoted as saying, "I have never seen a case of benzodiazepine dependence."[22] Furthermore, he even described addiction to Valium as ". . . an astonishingly unusual event."

At the height of Valium's popularity in the mid-1970s, roughly 14% of Americans filled prescriptions for this — supposedly — non-addictive pill.[21]

Of course, there was some opposition to Valium and other benzodiazepines. A New York Times piece from May 19th, 1974, questioned the prevailing wisdom that Valium represented a safe and effective treatment for anxiety.[23] And yet, most primary care physicians and psychiatrists continued to prescribe Valium in droves.

The Valium tide began to shift in the early 1980s as research started generating data that became increasingly difficult for health professionals to ignore. Multiple analyses agreed: not only was benzodiazepine dependence and withdrawal real, but it was also occurring even at prescribed levels.[24,25]

SSRI and SNRI Antidepressants

The institutional dismissal of benzodiazepine withdrawal is strikingly similar to the modern day treatments of SSRI and serotonin and norepinephrine reuptake inhibitor (SNRI) discontinuation effects. Professional and popular opinion regarding antidepressants has also followed a similar line.

When first introduced, SSRIs and SNRIs were hailed as wonder drugs, medications that represented a real answer to depression. They were marketed and viewed by the public as safe and trusted "quick-fix" solutions for all types of depression that came with few to zero side effects.

This stance has changed little over the last few decades, at least on the part of pharmaceutical companies and mainstream medicine. But from a science and clinical application perspective, this stance is becoming increasingly at odds with the body of available research evidence.

A growing number of validated, peer-reviewed analyses have confirmed: not only is antidepressant withdrawal a legitimate phenomenon, but it is far worse than withdrawal associated with benzodiazepine discontinuation, with longer-lasting and more severe manifestations.[26]

Withdrawal Symptoms Common to Both Benzodiazepines and SSRIs/SNRIs[26]

sweating	lightheadedness
flu-like symptoms	chest pain
headache	postural hypotension
flushing	vomiting
fatigue	anorexia
abdominal pain/cramping	electric shock sensations
pain	weakness
malaise	diarrhea
tachycardia	tinnitus
dizziness	blurred vision

(table continued on page 7)

Withdrawal Symptoms Common to Both Benzodiazepines and SSRIs/SNRIs (continued)

hyperesthesia	muscle spasms	derealization
altered taste	confusion	depersonalization
paresthesia	amnesia	dysphoria
myoclonus	anxiety	nervousness
tremor	lethargy	delirium
coordination problems	decreased concentration	aggressive behavior
numbness	agitation	restlessness
stiffness	depression	insomnia
myalgia	irritability	nightmares
ataxia	panic	sleep problems

Why Isn't It Called Antidepressant Withdrawal?

After enough reporting and research showing how antidepressant withdrawal was indeed a real risk, the psychiatric industry finally reacted. The response was similar to that seen with Valium: downplay, ignore or outright deny.

In effect, mainstream psychiatry made a concerted effort to rebrand this cluster of withdrawal symptoms as something more innocuous.

Even as thousands of individuals reported the same types of symptoms and it became evident what they were experiencing was, in fact, withdrawal, psychiatrists didn't budge. Seeking to avoid the stigma and potential loss of profits associated with a negative term such as "withdrawal," psychiatry simply established a new name.

The clinical term for withdrawal from SSRI and SNRI antidepressants is "antidepressant discontinuation syndrome" (ADS) — not withdrawal.

The benign nature of this term is not accidental.

It was first coined by a representative of pharmaceutical giant Eli Lilly at a meeting in the Committee on Safety of Medicines (UK) in 1998[27,28]:

> *The Committee was informed that Lilly . . . has expressed concern on the use of the term "withdrawal reaction" . . . due to the fact that "withdrawal" has a specific meaning and implies the drug is addictive. Lilly has suggested the use of the term "discontinuation reactions."*

As you might guess, Eli Lilly was the marketing authorization holder for Prozac at the time.[6,27,28] Fortunately, the Committee opted not to accept this suggestion — at least not publicly — in 1998. But in 2003, the same entity expressed concern that "issues of semantics" might be standing in the way of antidepressant prescribing.

In other words, it would be more challenging to distribute information about negative withdrawal reactions and addiction risks that satisfactorily fulfilled basic requirements for informed consent without reducing the number of patients taking the medication.[6,27,28]

This brings us to the issue of informed consent, where patients are completely informed of both the benefits and drawbacks of any proposed treatment. You might wonder if this diplomatic way of describing antidepressant withdrawal from organizations within the psychiatric community — entities with known ties to the pharmaceutical industry, no less — actually respects the informed consent principle. [6]

The simple answer is: it doesn't.

A 2015 review of physiologic, neurologic, and cognitive symptoms associated with SSRI antidepressant cessation concludes that referring to such symptoms as "discontinuation syndrome" is highly misleading.[29]

The researchers stated the appropriate terminology should be "withdrawal syndrome," since patients are clearly experiencing withdrawal from their medication when trying to stop it. Research indicates up to 55% of patients experience significant withdrawal effects when they discontinue antidepressant medications, and 27% self-report addiction.[30]

These are significant numbers with profound implications.

And since, roughly 40 million individuals are taking antidepressants in the U.S., more than 20 million are at risk of withdrawal upon discontinuation and 10 million are struggling with antidepressant addiction.[18]

Taking a step back to look at the current status quo of mental health care, it becomes clear that depression and anxiety are not the only crises with which we are now faced.

We also have a crisis of antidepressant medication dependence and withdrawal syndromes.

Current Treatment Approaches for SSRI Withdrawal

Given the scope of the number of antidepressants being prescribed and used in the U.S. and abroad, it would seem a matter of utmost importance that psychiatry should develop clinical guidelines for safe antidepressant discontinuation.

Unfortunately, the literature on antidepressant withdrawal "best practices" is sparse and, at best, confusing. Psychiatry continues to adhere to a largely symptoms-based medication model of treatment. It remains steadfast in minimizing and effectively denying responsibility for teaching physicians how to safely stop prescribed medications.

But while psychiatry lacks official, comprehensive guidelines for managing withdrawal from SSRI antidepressants, several strategies do actually exist. However, these strategies are not formalized, do not reflect a field-wide consensus, and are based largely on the clinical experiences and personal preferences of individual physicians.

Proposed strategies for treating patients struggling with antidepressant discontinuation include:

1. **Tapering based on symptoms:** If side effects are concerning, temporarily increase the medication dose and then resume the taper more slowly.
2. **Switch to another SSRI or SNRI antidepressant with a longer half-life:** Drugs with longer half-lives may produce fewer acute withdrawal symptoms because their levels decrease more slowly over time. Switching to Prozac is often utilized as a withdrawal treatment strategy, as Prozac has a relatively long half-life.
3. **Prescribe an adjunctive atypical antipsychotic:** While atypical antipsychotic medications might help with symptoms, they come with their own concerning side effects. Antipsychotics are known to cause weight gain, increased cholesterol, and tardive dyskinesia — a potentially permanent movement disorder.

4. **Psychotherapy:** Cognitive behavioral therapy, classic psychoanalysis, and mindfulness are often suggested as strategies to help ameliorate withdrawal symptoms.
5. **Exercise:** Known to be helpful for depression, physical exercise is often recommended to try and decrease withdrawal symptoms.
6. **Phototherapy:** Phototherapy utilizes artificial light exposure as a means to synchronize patients' circadian rhythms, normalizing the sleep-wake cycle and helping to balance mood.
7. **Give up:** Traditional psychiatry often recommends that patients who find it too difficult to come off medications ultimately stay on their medications indefinitely, even if the drugs are no longer providing any therapeutic benefits.

Reviewing these suggestions, I am struck by how little they offer the patient suffering from antidepressant withdrawal. Replacing a patient's antidepressant with an SSRI with a longer half-life may lessen the severity of withdrawal symptoms to some unknown degree, but this is not always successful. Employing a slow taper is critical, but on its own, a taper is insufficient to effectively address withdrawal.

To effectively treat patients experiencing withdrawal from antidepressant medications, doctors must help patients manage their withdrawal symptoms as well as implement strategies to prevent depression relapse.

Lack of Clinical Trials

Although all of the above-listed suggestions can be found in published medical and psychiatric literature, none have been verified by clinical trials. Psychiatrists are not taught these techniques and are not trained in them. These recommendations are not supported by research.

Instead, they represent the common practices that mental health clinicians have used in the past to treat patients struggling with medication discontinuation.

Recommendations for drug tapering protocols abound in the research literature, reflecting a stunning lack of professional consensus as to best practices:

- Some studies suggest reducing a patient's antidepressant dosage by 25% each week to ameliorate symptoms of withdrawal.
- Other studies advise a longer taper of between six and eight weeks.
- Still, other researchers have concluded that a four-month taper is best.
- We even find studies claiming there is no distinct advantage to be gained through tapering as opposed to abrupt discontinuation.[32,33]

This raises a critical question: How can psychiatry teach doctors to prescribe medications when the field does not know how to safely stop those same medications?

Lacking research-based protocols for safely tapering patients off SSRI antidepressants, many psychiatrists and patients simply give up. If there is any consensus to be found in traditional psychiatry regarding antidepressant tapering, it is one of cynicism and defeat.

As one recent study puts it, since ". . . depression is a chronic disorder, we recommend continued, potentially indefinite, treatment to reduce the risk of relapse or recurrence . . ."[34]

In other words, some of the leading researchers in the field claim the only method proven to mitigate withdrawal from stopping antidepressants is to not stop in the first place!

While in the past psychiatrists could perhaps claim a certain level of ignorance about the risks and side effects of antidepressant medications, today's psychiatrists cannot.

Recommending permanent treatment with antidepressants as a way to prevent withdrawal is simply unacceptable. Fortunately, there is a better way: Functional Psychiatry.

What is Functional Psychiatry?

Like all psychiatrists, I was formally trained in the use of medications to treat patients struggling with mental health conditions. Even during my medical training, however, I was aware of the existence of scientific research demonstrating that nutritional deficiencies can play a significant role in mental health.

My immersion into this research, along with observations from over three decades in clinical practice, led me to a Functional Medicine approach for the treatment of mental illness.

Functional Medicine is an integrated approach that seeks to identify all factors that may be contributing to a disease, whether they be biochemical, nutritional, psychological, environmental or some combination of these. It honors the profound connections that link mind and body and also adheres to a model of personalized treatment based on the fundamental concept of biochemical individuality.

Early in life, we recognize the people we know have many differences in appearance and personality. In fact, everyone is a unique individual. It shouldn't be hard to realize, then, that all of us are also biochemically unique, meaning that our bodies each function differently.

The belief underlying this approach is that just as your personality and appearance are unique, so are the factors that contribute to many common mental health disorders affecting people all over the world.

Functional Psychiatry

When a Functional Medicine model is applied to psychiatric practice, it is often referred to as "Functional Psychiatry."

Often, a patient's biochemistry can be optimized so that a requirement for medication is eliminated.

Although in certain cases medication may still provide benefits. I believe that medications do have a place in psychiatry, even within the parameters of a Functional Psychiatric practice.

It's my opinion, however, that medications should be administered together with targeted interventions based on the comprehensive assessment of a patient's medical and biological profile.

Functional Psychiatry offers actionable clinical solutions by addressing the underlying biochemical, genetic, and metabolic imbalances that contribute to poor mental health. It uses information derived from biochemical analysis to formulate personalized, individualized treatment plans.

Every Person is Unique

Since every person is molecularly and biochemically unique, their health and treatment for any health issues that may arise should cater to that uniqueness as well.

One size does not fit all when each person comprising the "all" is molecularly and genetically special.

One complaint I have encountered repeatedly throughout my years of practice comes from patients on long-term antidepressant treatment who see the initial benefits of their antidepressant decrease over time.

In such cases, psychiatrists will often prescribe additional medications to the patient, with little additional benefit. From my own clinical experience, the two most common causes of this loss in efficacy are deficiencies in Vitamin B12 and folate — nutritional deficiencies that can be identified through lab testing.

Studies confirm that depression treatment outcomes are better in patients with higher levels of serum B12.[35] Additional research also suggests that folate deficiencies may be present in approximately one-third of depressed patients.[36] Combining folate with antidepressants also leads to markedly better outcomes.[36,37]

Vitamin B12 and folate are both essential for neurotransmitter production. The brain cannot produce enough serotonin without them.

Simply addressing these two deficiencies can have an enormous impact on patients who are struggling with depressive symptoms.

It seems both logical and intuitive, then, that we should take a patient's unique biochemical profile into account during treatment. The practice of psychiatric medicine, however, has by and large taken a different approach.

The Problem With Patient Reporting

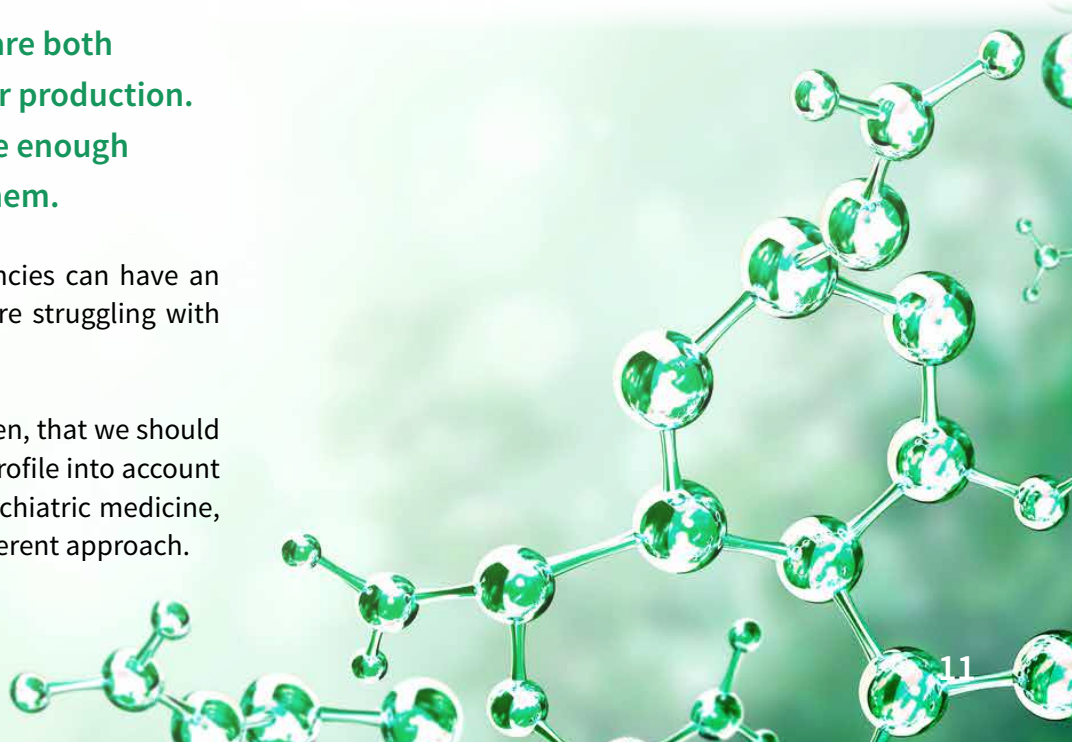
If someone visits a doctor with an injured knee, they'll likely receive imaging such as X-rays. This objective testing enables the physician to correctly diagnose the injury and craft a therapeutic plan targeted to the type of injury present. In psychiatry, on the other hand, there is a general overreliance on the clinical interview, as well as the self-reporting of patients.

Imagine visiting your doctor for a knee injury only to have them ask, "What do you think is wrong with your knee?" and then hand you a prescription for a treatment that is based solely on your verbal answers.

How likely is it that the treatment that you are given will be effective and target the root cause of your pain and discomfort? Not very!

Yet this is the very approach most often utilized in mainstream psychiatry. The statement "I feel depressed" tells us as much about a patient's mental, physical, and biochemical health as "my knee hurts" tells us about the functioning of his or her knee.

It's for these reasons and many more that I started to explore and practice Functional Psychiatry. I've been convinced by the amazing results of thousands of patients and encourage practitioners everywhere to comprehensively assess the entirety of a patient's profile and not just simply prescribe a potentially addictive medication after a few basic questions.



Functional Psychiatry for Antidepressant Withdrawal

While the full topic of withdrawal treatment is covered in my textbook, *Functional Medicine for Antidepressant Withdrawal*, we'll briefly cover one important, and often overlooked, aspect of antidepressant withdrawal here: vitamin D. Many of the effective treatments for reducing and eliminating antidepressant withdrawal affect serotonin synthesis. It's likely that vitamin D plays a part in reducing withdrawal symptoms through this mechanism as well.

Vitamin D

Over the last thirty years the story of vitamin D has undergone a radical transformation. Vitamin D was once considered to be a nutrient of marginal importance, relevant only to calcium absorption and the development of healthy bones. Following the discovery of vitamin D receptors in cells throughout the body, however, a multitude of different Vitamin D effects have come to light — including effects on mental health — and the understanding of vitamin D has undergone a profound evolution. In truth, it is likely that we have only scratched the surface in terms of understanding Vitamin D's roles in brain health, but what we do know cements vitamin D's status as an essential micronutrient critical for optimal brain function.

Vitamin D is actually a prohormone derived from cholesterol. There are two main forms: vitamin D2 derived from plant sources and vitamin D3 derived from animal sources. While dietary intake does provide some of the nutrient, the primary source of vitamin D is synthesis in the skin from cholesterol precursors via a reaction to ultraviolet radiation (UV-B) in sunlight.[38]

In addition to being important for the absorption and utilization of the essential minerals calcium and phosphorus, vitamin D is vital for the healthy growth of bones and teeth. Beyond nutrient absorption, vitamin D has also been shown to be a major player in the regulation of genetic expression.

Over 1,000 genes in the human genome contain vitamin D response elements (VDREs) that change gene expression when vitamin D levels are sufficient.[39-41]

Strong correlations exist between vitamin D and numerous health conditions. Low vitamin D is associated with inflammation, cancer, autoimmune conditions, heart disease, high blood pressure, and diabetes.[42,43] It is worth noting, however, that trials in which vitamin D has been used to treat such conditions have not always demonstrated consistent benefits. Many studies often prioritize bone health as a primary experimental outcome, ranking other outcomes — such as neurologic and psychiatric variables — lower in terms of clinical significance. Additionally, many reports have drawn conclusions about the efficacy of vitamin D supplementation without having measured subjects' initial vitamin D levels. Indeed, some of the most emphatic denials of vitamin D's clinical utility have come from trials in which NO blood levels whatsoever were drawn at any stage of research.

How can we estimate the benefits of an applied nutrient without any knowledge of which patients are deficient and need vitamin D supplementation?

As already mentioned, vitamin D has significant associations with mental health. Vitamin D receptors are found in both neurons and glial cells — the specialized brain cells that support neurons by providing nutrition and insulation.

When present in sufficient volumes throughout the brain, vitamin D also activates the rate-limiting enzymes involved in neurotransmitter synthesis, thereby increasing serotonin, dopamine, and norepinephrine production.[44,45]

This essential role in neurotransmitter synthesis may explain, in part, the correlations between vitamin D status and depression that have been illuminated by research.

A cross-sectional study involving over 12,000 patients identified associations between low vitamin D and levels of depression.[46]

More recently, a large-scale meta-analysis concluded that the administration of supplemental vitamin D can help improve depressive symptoms in individuals who present with low levels.[47]

Significant correlations also link low vitamin D and suicide risk in adolescent and adult populations. In a Korean study of over 150,000 individuals, analysis revealed that vitamin D deficiency was associated with a 14% increased risk of suicide.[48] In a smaller study, 58% of adolescents who had previously attempted suicide were shown to be deficient in vitamin D.[49]

A more recent study also documented that suicidal adolescents had lower vitamin D levels than did non-suicidal, healthy controls.[50] Adolescents with insufficient vitamin D levels have been shown to be 1.5 to 1.8 times more likely than healthy controls to report anger, anxiety, worry, and poor sleep.[51]

The regulation of neurotransmitter synthesis by vitamin D may be particularly relevant for serotonin function.

Tryptophan hydroxylase (TPH) is the rate-limiting enzyme for serotonin production, and has two forms: TPH1, found mainly in the gastrointestinal tract; and TPH2, which is found in the brain.

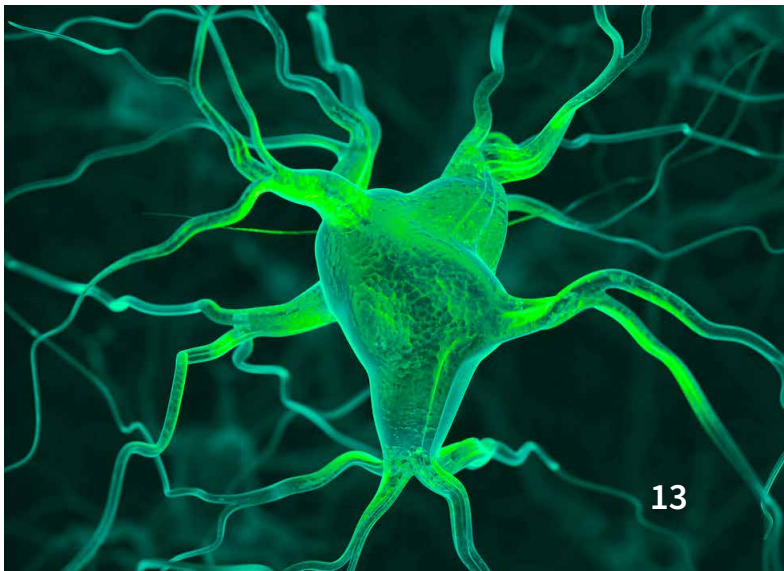
Vitamin D appears to act on TPH1 and TPH2 in opposing fashion. Vitamin D activates TPH2 serotonin production in the brain while decreasing serotonin production by TPH1 in the gut.[52]

Given how vital vitamin D is to so many systems and processes in the human body, it should be a matter of global concern that a significant percentage of the human population is deficient in this essential nutrient.

An estimated 1 billion people worldwide suffer from vitamin D deficiency.[53] In the United States, 77% of adults have inadequate vitamin D levels.[54]

Results from large-scale analyses have been overwhelmingly corroborated by smaller studies, with a 2018 report documenting that nearly 40% of hospitalized patients aged 20 years or more had a significant deficiency.[55]

Vitamin D deficiency is a global phenomenon. In light of our ever-expanding knowledge as to Vitamin D's complex and essential functions for physical, hormonal, and mental health, this is a phenomenon that today's health professionals cannot afford to overlook.



Vitamin D & Antidepressant Withdrawal

Vitamin D is critical for calcium balance, immune function, and the activation of enzymes involved in the production of serotonin. Its importance for serotonin synthesis cannot be overstated: vitamin D is an essential cofactor in the rate-limiting step of the serotonin synthesis pathway. Accordingly, serotonin (and important serotonin derivatives such as melatonin) cannot be produced in the absence of vitamin D.

Optimization of serotonin levels provides significant mental health benefits and support for preventing antidepressant withdrawal. Treating vitamin D deficiencies, when present, is a critical, and yet commonly overlooked, component of supporting serotonin synthesis. In my experience, improving vitamin D status can be a key factor in helping patients successfully taper off their antidepressant medications.

Numerous other nutrients & supplements can also play a part in treating antidepressant withdrawal. Vitamin D is one of many important players that can provide significant relief.

To explore other potential components of treatment, see my textbook *Functional Medicine for Antidepressant Withdrawal*.

The Doctor-Patient Relationship

First and foremost, the path to recovery from antidepressant withdrawal can be difficult and full of challenges. That's why it's absolutely important for a patient and their doctor to enter this journey together.

There are several critical components involved:

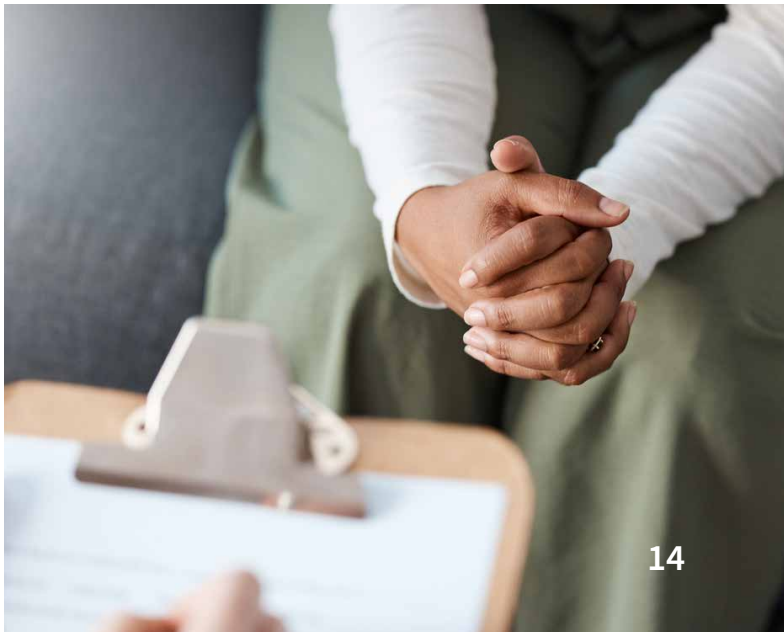
1. A therapeutic alliance based on trust and non-judgment should be established between the doctor and the patient.
2. The physician should strive to understand the patient's motivations for wanting to quit.
3. The patient should be tested and treated for any nutritional deficiencies, then wait for at least two to three months before starting any antidepressant taper.
4. The patient should be in charge of the tapering process to allow a sense of ownership and reduce anxiety.
5. Symptoms should be closely monitored with each step in reduction of the medication and side effects should be limited to as little anxiety and insomnia as possible — not lasting more than a few days.
6. The doctor and the patient should be flexible and willing to move the goalpost as the journey progresses.

A Therapeutic Alliance

The therapeutic alliance between doctor and patient is the foundation of medicine. Establishing trust and developing a non-judgmental, expectation-free approach is the most important first step for effective treatment.

Understanding the Motivation to Quit

It is important to know and understand the different reasons why an individual wants to stop taking antidepressant medication. Some patients may feel like the drug is no longer beneficial or have heard that antidepressants can harm the brain. Sometimes family members or friends may also be weighing in and advising patients to stop. Understanding a patient's rationale and motivations is important for making sure that medication discontinuation is appropriate.



Testing for Nutritional Deficiencies

Before starting to taper off antidepressants, a patient should be free of symptoms for a minimum of two to three months. Often, longer is better. Testing and treating nutritional deficiencies and providing additional supplemental support are key for symptom resolution (outlined in *Functional Medicine for Antidepressant Withdrawal*).

In cases involving a longer duration of chronic depression or a history of difficult withdrawal experiences, the patient should have achieved a symptom-free state for at least six months to one year before the antidepressant taper is initiated.

The Patient is in Control

When patients taper their medications, they need to be in the driver's seat, taking charge and being involved participants in their own healing journey. The only exception to this general rule is when a patient wants to taper too quickly — always go slow!

Protocols that call for decreasing medications by a certain amount per a fixed timeframe — such as reducing the dose by 25% every two weeks — miss the point.

Every patient is unique, and how their brain and body react to dose decreases will be unique as well. Tapering medication slowly, based on each person's needs and experiences, allows for a more appropriate personalized approach.

Unfortunately, most antidepressants do not come in forms that are conducive to slow tapering. I don't recommend "counting beads" — the tiny particles found inside the capsules of some antidepressant medications. A reputable compounding pharmacy can create custom dosing, which makes things much easier for both patient and provider throughout the tapering process.

Monitor the Symptoms

Whenever a patient decreases a dose, he or she should only experience mild symptoms for a few days. Anxiety and insomnia are the most common side effects, but these symptoms should always be self-limited.

Brain zaps and skips or other more severe side effects should be avoided completely. If the patient is experiencing more severe symptoms, the previous medication dose should be restored and the patient evaluated further. There may be something that was missed that is contributing to their side effects. Additional supplemental support may be indicated. If a patient has underlying nutritional deficiencies, he or she may need a longer preloading timeframe to restore their biochemistry before continuing the taper.

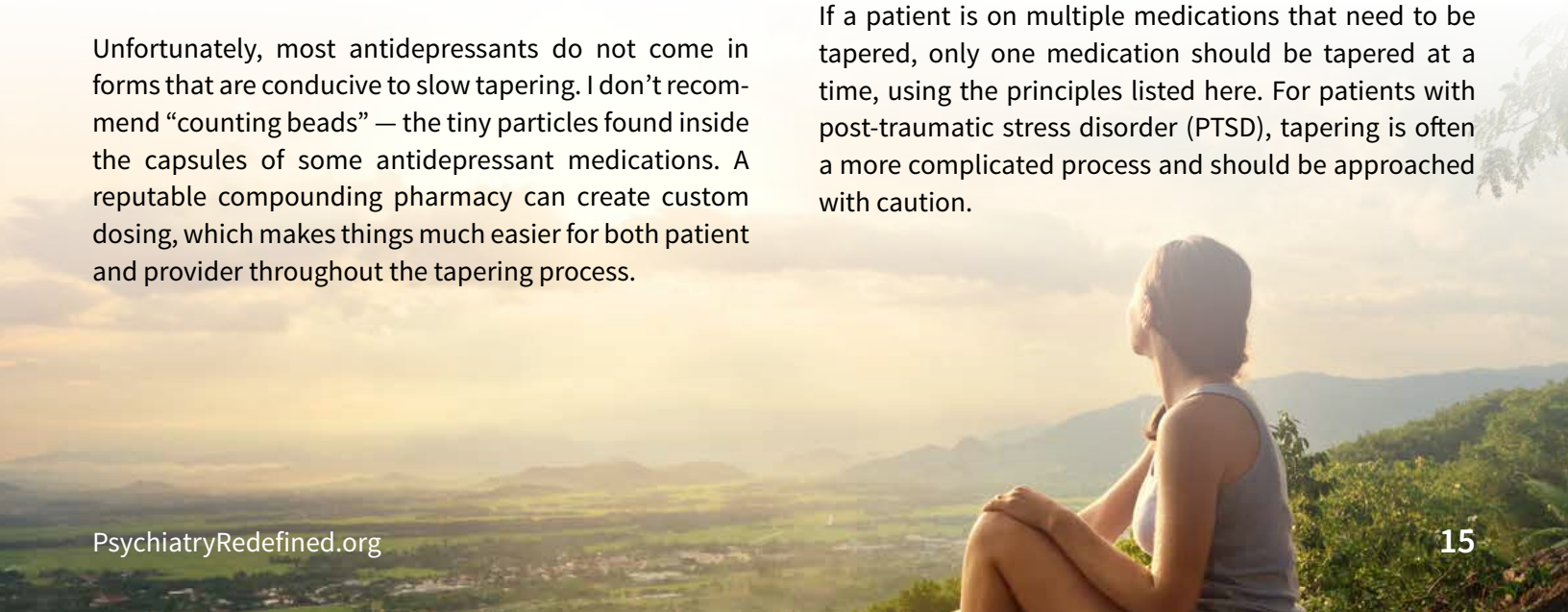
Be Flexible!

Unfortunately, some patients simply do better long-term on medication. If a patient is on a reduced dose but continues to struggle with further decreases, it may be that this reduced dose can be considered a success.

It's also important to keep in mind the differences between withdrawal and relapse. Withdrawal symptoms experienced during a safely and carefully implemented taper are short-lived during the process.

Relapse, if it occurs, is the return of full-blown depressive symptoms, typically experienced within one to three months after drug discontinuation. Relapse should be treated the same way as any new case of depression.

If a patient is on multiple medications that need to be tapered, only one medication should be tapered at a time, using the principles listed here. For patients with post-traumatic stress disorder (PTSD), tapering is often a more complicated process and should be approached with caution.



A Path Forward

There are effective techniques to help patients safely stop taking antidepressant medications. By having a trusting relationship between doctor and patient, understanding a patient's personal health goals, testing and addressing nutritional deficiencies and genetic vulnerabilities, and receiving continued support, a patient has their best chance for success.

We've seen how medications like Prozac are marketed by the pharmaceutical industry, with the emphasis often placed on immediate sales with promises of lasting effects. But this promise often can't be kept.

All SSRIs alter brain chemistry.

As SSRI medications modulate levels of specific neurotransmitters, the brain responds by changing cellular levels of the receptors for those neurotransmitters. As such, the brain increasingly requires the same level of neurotransmitters to sustain what has become the new biochemical "normal." These changes can lead to withdrawal effects in over half of patients discontinuing antidepressants.[30,31]

Fortunately, the Functional Psychiatry approach has been time-tested — not only by me, with thousands of patients, but also by other health providers across the globe. Too many patients have been struggling and suffering from painful antidepressant withdrawal effects for too long. Functional Psychiatry establishes a practical, evidence-based model for how relief can successfully be provided.

Patients no longer need to suffer from the limitations and inadequacies of traditional "one-size-fits-all" approaches:

- Effective symptomatic resolution IS possible.
- Successful tapering with reduced side effects IS possible.
- Lasting recovery from antidepressant withdrawal IS possible.

Functional Psychiatry illuminates a path forward to therapeutic success and brings the realization of these goals within reach. Recognizing, understanding, and celebrating the unique nature of every patient opens the door to a more inclusive, comprehensive approach to medicine: Functional Medicine.

Patients deserve collaborative relationships with healthcare providers who respect their dignity and autonomy, understand their needs, desires, and goals, and uphold their right to participate actively in their own curative journeys.

Those who pursue good health deserve providers who implement a treatment approach that acknowledges, embraces, and nurtures their extraordinary uniqueness while fostering hope and healing.

While this ebook focuses mostly on the history and the current state of the antidepressant withdrawal problem, antidepressant withdrawal treatment is further elucidated in my textbook, *Functional Medicine for Antidepressant Withdrawal*.

There is a path forward for people suffering from antidepressant withdrawal. Identifying the underlying nutritional deficiencies, and supporting serotonin production and other aspects of brain neurochemistry are often key. Functional Psychiatry can provide the answers that we seek to break the chain of medication withdrawal.

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