The Manifestations and Triggers of Mental Breakdown, and its Effective Treatment by Increasing Stress Resilience with Psychosocial Strategies, Therapeutic Lifestyle Changes, and Orthomolecular Interventions*

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Abstract *For 15 years the author has focused his clinical practice on the evaluation and treatment of mental disorders. Here he presents two common patient scenarios, which are amalgams of many patient cases. He refers to these cases throughout this report to highlight specific themes, opinions, and/or observations about individuals having mental disorders. This paper focuses on the psychological domain of chronic stress as resulting from allosteric overload, how it manifests, what factors exacerbate it, and how chronic stress can be managed effectively with a holistic plan that includes the appropriate use of psychosocial strategies, therapeutic lifestyle changes, and several "core" orthomolecular therapies.*

Introduction

For 15 years I have focused my clinical practice on the evaluation and treatment of mental disorders. This has afforded me a tremendous amount of education and clinical experience with this vulnerable group of patients. While I cannot speak of any particular patient as being "typical" since they are all individuals with their own unique histories and physical make-up, all such patients have presented with consistent commonalities (and themes). Here I present two common patient scenarios, which are amalgams of many patient cases. I will refer to these cases throughout this report to highlight specific themes, opinions, and/or observations about the evaluation and management of individuals having serious mental disorders.

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Patient Scenario 1: This patient, who I will refer to as Mary, is a 32-year-old female with chief complaints of fatigue, insomnia, depression, and anxiety. The onset of her depression began five years ago following her marriage. She met her husband while in graduate school. After dating for eight years, they decided to get married. Soon after their marriage they started having difficulties getting along. Often they would not see each other for weeks at a time owing to their different work schedules. They have no children and are uncertain if their marriage should continue. They have not sought couples counselling.

Mary is tired for much of the day. If she is lucky, she may exercise once each week. She seldom eats breakfast, often rushing through lunch while working at her desk. Over the past year, her work performance

has declined and people have noticed that she appears less sharp. She avoids most of her coworkers because she does not want to "waste" valuable time at work. Her boss has told her on numerous occasions that she needs to be more sociable because people often perceive her as cold, detached, and unfriendly. At dinner time, Mary typically eats alone while watching television. Shortly after dinner, Mary will do some work and then watch more television. She tries to get to sleep by midnight. Her sleep is fragmented. She wakes up several times each night worrying about her marriage, her job, and how unwell she feels. She used to go to church on Sundays, but stopped since her husband finds "religious" things silly.

She saw her family doctor several times over the past 4-5 months. She was told that she has clinical depression and generalized anxiety disorder. At the first visit she was prescribed sertraline hydrochloride (50 mg/day) and told that she has a biochemical imbalance that requires psychotropic medication. She is taking sertraline hydrochloride (150 mg/day), lorazepam (1 mg sublingually as needed), and zopiclone (7.5 mg at bedtime/day).

Patient Scenario 2: This patient, who I will refer to as Mark, is a 22-year-old male with a chief complaint of schizophrenia. He was diagnosed four years ago after being admitted to the hospital near the university he attended. At the time of his first episode of psychosis, he had just ended a tumultuous relationship, and he had been smoking cannabis daily for months as well as occasionally using amphetamines to improve his focus and get his homework done in an expedited manner. During his first episode of psychosis, he was in hospital for two weeks where his mental state normalized after being administered a couple of haloperidol injections, followed by lorazepam as needed for acute anxiety (1 mg), and risperidone (5 mg) given nightly. At discharge, he was told to remain on the risperidone and lorazepam until he could be evaluated by a psychiatrist in the community.

About a month later, a community psychiatrist told Mark that he likely had schizophrenia and that he would need medication for the rest of his life. Mark left the psychiatrist's office irritated and felt like the visit was a "complete waste of time." He took himself off his medications within a couple of weeks without any guidance. Several months later, another relationship went awry after he fell deeply in love with another girl. Following this breakup, Mark began to use cannabis daily. After a few weeks he started isolating himself, stopped eating, became paranoid, and said bizarre things to people he knew and to complete strangers. Eventually a concerned friend took Mark to the emergency room of a nearby hospital. While waiting Mark became agitated. He was restrained forcibly, and given medication to quickly sedate him. He was kept in a locked unit for two weeks where no visitors were allowed to visit him. Then he was placed in a less strict mental health ward for approximately two months. He was discharged on the following medications: olanzapine (10 mg twice daily), paroxetine (30 mg/day), clonazepam (1 mg twice daily), and zopiclone (7.5 mg at bedtime).

When Mark was in my office for the first time, he was still taking these medications despite feeling that they were making him sick and progressively unwell. He weighed 230 pounds (his weight prior to medication was 170 pounds), felt tired most of the day, complained of an inability to concentrate (could not watch television or read without losing his focus), had no passion or enthusiasm for life and felt "useless" as a person.

Mark has been away from university for three years and has lost touch with most of his friends, all of whom have graduated. He normally goes to bed around 1 or 2 A.M. and sleeps until noon or later. He does nothing all day and feels bored most of the time unless he is smoking. He spends at least 4-6 hours on the internet, much of that time on pornography websites. Mark was assigned to an Assertive Community Treatment (ACT) team but he feels that they care very little about his life and situation. Mark's case worker sees him once a week but only asks about the medications. His psychiatrist has

told Mark on many occasions that he was a tremendous success since his psychotic symptoms have all but resolved. Mark felt awful and wanted to see if he could potentially get off his medications and return to university. His parents are not willing to entertain the notion of Mark discontinuing medication. They told him that he would need to be on medication while living in the family home.

Mark's and Mary's stories are similar in that both individuals found it progressively more difficult to moderate their stress levels amidst the storms of their lives. Both individuals succumbed to the effects of chronic stress, which has been defined as "ongoing demands that threaten to exceed the resources of an individual in areas of life such as family, marriage, parenting, work, health, housing, and finances."[1] When an individual is faced with chronic stress, it may seem enduring and without a clear ending. Somehow while unwell, the mentally ill individual has to manage his/her stress level while moderating its problematic effects. The term "allostasis" coined by Sterling and Eyer, defined as achieving "stability through change,"[2] was constructed to describe a process in which an individual adjusts to life's stresses over time. While the specifics of these stabilizing adjustments (i.e., adaptive responses) are beyond the scope of this paper, adaptation through change demands the synchronous activation of neural, neuroendocrine, and neuroendocrine-immune mechanisms.[3]

Mark and Mary experienced the effects of allosteric overload, which led to signs and symptoms of mental distress and/or physical dis-ease (denoting an imbalanced or disrupted physical state). This results when an allosteric system fails to habituate to the recurrence of the same stressor, fails to shut off following overwhelming stress, and/or whose response is deficient resulting in heightened activation of other, normal counter-regulatory systems.[3,4] Unmitigated chronic stress because of allosteric overload will typically cause psychological and physiological dysregulation, especially in people who are vulnerable to mental illness.

This paper will focus on the psychological domain of chronic stress as resulting from allosteric overload, how it manifests, what factors exacerbate it, and how it can be managed effectively. Chronic stress is a systemic problem. Prolonged distress can damage the body and brain, strain patients' adaptive capabilities, disrupt neurotransmitters and deplete essential nutrients such as energy and enzyme cofactors. Vulnerable individuals can destabilize until they experience or relapse into episodes of mental illness.

Manifestations and Triggers of Mental Breakdown

(1) Mental distress signals of inadequate allostasis

All individuals differ in their abilities to achieve adequate or productive allostasis when faced with an overload of life stresses. It is obvious that Mark and Mary displayed different observable signals of mental distress. Mary presented with constant worrying, insomnia, and depression while Mark's signals of mental distress involved cannabis addiction, paranoia, and bizarre behaviour. Though I have not statistically analyzed the different types of mental distress signals that my patients have displayed over the past 15 years, the most common ones I've observed are listed in **Table 1** (p.114) in no particular order.

(2) Psychosocial distress signals and triggers of inadequate allostasis

Outside of the observable signals of mental distress that can be elucidated in the clinical encounter, patients will often report psychosocial distress signals that further damage the quality of their lives. Psychosocial distress signals refer to difficulties in maintaining productive relationships (i.e., at home, work, or in other social settings). These typically lead to psychological difficulties or the exacerbation of existing psychological problems.

Mary's unhappiness was partly related to being disengaged from her husband and not being able to communicate effectively with him. Also, Mary was working too much, not meeting her work deadlines, and perceived

Table 1. Mental Distress Signals of Inadequate Allostasis

Anxiety, persistent or intense episodic attacks
Depression
Despair
Helplessness
Insomnia
Lack of optimism (absence of a positive outlook)
Anger
Denial
Guilt
Hostility
Hyperactivity
Isolation
Restlessness
Shame
Addictive behaviours (e.g., cannabis and alcohol) to anesthetize feelings
Inability to delay gratification
Not eating, under-eating, or over-eating
Habitual cutting or the desire to harm oneself
Suicidal thoughts
Homicidal thoughts
Delusions
Dissociation
Depersonalization
Grandiosity
Hallucinations
Hyper-religiosity or bizarre religious beliefs
Mania
Obsessions
Paranoia
Persecutory thoughts

by her coworkers and boss as withdrawn and unapproachable. She ruminated excessively and worried about her job and her marriage. Generally she felt unwell.

Mark isolated himself from his peers during his second episode of psychosis and this isolation continued following treatment. He lost contact with his university friends. Mark remarked on how bored he was, and stated that he didn't do much other than smoke and meet once each week with his ACT team case worker.

Patients with life situations and problems like Mark and Mary often report many

psychosocial distress signals. The common ones I've observed in clinical practice include: (1) frequent difficulties at work, problems completing projects on time, delays in getting things done, etc; (2) boredom, often associated with persistent ruminations and negative thoughts; (3) isolation from others, commonly associated with loneliness; (4) lacking a sense of life purpose; (5) not having close or caring friends and/or a social support system; (6) poor relational skills accompanied by frequent interpersonal conflict and a lack of quality interpersonal connections; and (7) financial problems.

The overarching phenomenon that prevents patients from correcting their psychosocial problems is their inertia in confronting them. Psychosocial problems won't go away by ignoring them, yet patients often erroneously believe that their problems will eventually resolve on their own without any active work or consistent efforts to change things.

Oppressive Forces that Promote Inadequate Allostasis

In addition to the mental and psychosocial distress signals just described, strong oppressive forces may undermine a patient's ability to achieve allostasis. This usually involves some combination of the following four interrelated domains: (1) the dominant mental health system; (2) psychotropic medication; (3) psychiatric diagnoses; and (4) family and friends.

This does not mean that all these domains are "bad" and unhelpful for every patient; rather, I am simply reporting observations and describing how these domains often operate oppressively to the detriment of patients under my care. These domains can weaken a patient's capacities for hope and enthusiasm, and undermine the belief that change is possible, thereby hampering the patient's efforts to re-establish allostasis.

(1) The dominant mental health system

I define the dominant mental health system as some combination of inpatient and outpatient medical services involving a psychiatrist, family physician and other treatment members who have been charged with providing the majority of mental health care to an identified patient. If the dominant mental health system is needed (e.g., suicide prevention), it should only be a short-term commitment. I have concluded that the sooner a patient departs from the system the better off he/she will be. When patients become more immersed in the dominant mental health system and get committed to it for an extended period, they are typically faced with increasing pushback, oppression, and an overall negativism about their recovery. This becomes particularly evident when patients question their current treatments, become empowered about self-care, seek providers outside of the dominant system and ask about "alternative" forms of treatment.

In Mark's case, he hated being on psychotropic medication and felt that they made him sick and progressively unwell. If Mark should voice his dissatisfaction to the clinicians overseeing his care, it has been my experience that such expressions of disappointment are usually met with oppressive and negative statements like:

"You need treatment for life."
"No other options can help you."
"This is the correct path and you should learn to accept it."

The after-effects of such statements often lead patients like Mark to become agitated since their individual needs have not been validated, recognized and/or handled empathetically. As a result, the prescribing clinician usually increases the dose of psychotropic medication or adds other psychotropic medication because he/she believes that Mark's behaviour not only represents a lack of insight, but also a need for more symptom-suppressive treatment (i.e., additional psychotropic medication).

Mark also participates in ACT, and should he question why he is being forced to take psychotropic medication, the pushback from the ACT team is something akin to: "You need medication for the rest of your life." While there are some very good ACT

teams that do more than enforce psychotropic medication compliance and provide compassionate care for their patients, many of my patients have not been pleased with their ACT team experiences. Patients have repeatedly told me that their ACT team's focus has primarily been on psychotropic medication compliance and not on their expressed individual needs. In one study, four in ten patients with psychiatric disorders reported experiencing some form of leverage to adhere to treatment in the preceding six months. Medication compliance enforcement pressures may involve the criminal justice system, finances, housing and outpatient commitment.[5] This study also found that patients exposed to the most coercion were more likely to take their medications as prescribed, but had less satisfaction with their treatment.

A more publicized study, the largest randomized trial to date on the subject of compulsory community treatment, compared community treatment orders (CTOs; same as ACT) and Section 17 among patients with psychosis in England.[6] The essential differences between patients on CTOs and Section 17 is that those on CTOs have longer periods of compulsory supervision. The results of this study did not show any differences in hospital readmission rates (36% for each group) despite the large differences in compulsory supervision (median 183 days for the CTO group compared to median eight days for the Section 17 group). The authors of this study concluded: "The evidence is now strong that the use of CTOs does not confer early patient benefits despite substantial curtailment of individual freedoms."

Thus, it appears that forced outpatient treatment (as in CTOs or ACT teams) does little to improve outcomes, and, more importantly, compromises patients' civil liberties. When patients like Mark become more unsettled and vocal about the way they wish to be treated, the dominant mental health system often becomes more controlling and oppressive to the point where, not uncommonly, patients like Mark lose hope and simply give up (i.e., after experiences that lead to "learned helplessness"). This typically happens over time as the patient's will and action to change are repeatedly ignored and disregarded, thus preventing the patient from receiving personalized care based on mutually respectful, non judgmental and meaningful collaboration that considers each patient's individual symptoms, diagnoses, responses to treatments and needs for support, encouragement and competent care so they can recover and live well.

The most egregious and dehumanizing form of oppression from the dominant mental health system results when a patient is involuntarily committed, forced to take psychotropic medication, isolated from family and friends, and kept in an unfamiliar environment for several days, weeks or longer. Such violations of civil liberties can squash a patient's will to get better, or even impair a patient's will to live. Another unfortunate consequence of forced confinement and treatment is that emotional and physical trauma can be associated with such a harrowing experience.

I was once asked by an intern at the college where I work if I would attend a Consent and Capacity Board meeting at a hospital on behalf of her sister, who was diagnosed with schizophrenia and had been held in a hospital facility on an involuntary basis for months. The family and intern wanted me to speak about possible alternative forms of treatment for schizophrenia. The hearing attendees included a lawyer who also happened be a psychiatrist, the patient's treating psychiatrist, family members, myself, and members of the hospital administration. The patient was committed and forced to receive psychiatric treatment despite the fact that she had deteriorated while under the care of the hospital. She was kept in a locked unit and had not seen any family members for 6-7 months. Her mother was a psychiatric nurse, and despite her pleas at the meeting that the hospitalization and psychotropic medications were making her daughter worse, she was denied any access to her daughter. The hearing determined that this patient needed to be in treatment for

another few months despite pleas from the patient's mother. I was never granted the opportunity to speak about possible alternative treatments for schizophrenia. The patient was eventually discharged after having been kept in a locked ward with dangerous criminal justice offenders for about 12 months.

A few years ago I had a conversation with this patient's sister (the former intern) and was told that the patient is now thriving without any medication, is working and living a normal life. Apparently, upon discharge the patient's mother slowly tapered her off her psychotropic medications. This was done despite major pronouncements and decrees that her daughter would require psychotropic medication for life. The patient returned to Iran where extended family could assist in her recovery without threats of hospitalization and forced involuntary commitment.

While this story eventually had a happy ending, many patients I work with feel completely helpless trying to understand and cope with the dominant mental health system that they have been forced to comply with. It takes time, but some of these patients can divorce themselves from the dominant mental health system. Many of them eventually become healthier and more productive. For some patients, the damage has been too much and continued for too long, making it unlikely that these patients will severe their connections with the dominant mental health system. For this group of patients, the oppressive forces of the dominant mental health system will always be an obstacle undermining their chances of experiencing meaningful recovery and achieving effectual allostasis.

(2) Psychotropic medication

Psychotropic medications are often touted as correcting some underlying defect or "broken" biology that is adversely affecting a patient's mental state. The most common example is the much-popularized belief that a serotonin deficiency is causal in depression, and that augmenting serotonergic neurotransmission will "correct" this "broken" biological system and hasten recovery from depression. There is no convincing data to support this popular belief.[7] Psychotropic medications are not disease-modifying interventions when compared to other medications which conventional medicine prescribes for diagnosed diseases or pathologies. More accurately, psychotropic medications are symptom-modifying interventions that "…induce complex, varied, often unpredictable physical and mental states that patients typically experience as global, rather than distinct therapeutic effects and side effects."[8] These global psychoactive effects (i.e., sedation, psychomotor slowing, activation, and altered sense perception) are often associated with negative outcomes.[9]

While the judicious use of psychotropic medication can benefit some patients (especially if the number of psychotropic medications are minimized, and treatment is restricted to short-term use only), this is not what I have commonly observed. I have seen numerous patients lose their drive and enthusiasm while on psychotropic medications. Drive and enthusiasm are essential "energetic" components in facilitating recovery. Patients like Mark often have their recoveries impeded by the resulting medication-induced psychoactive effects (e.g., alexithymia, anhedonia, cognitive dysfunction, inertia, and mental fatigue), which thwart their motivational systems. It was apparent that Mark's "energetic" capacities for change were severely limited due to the psychoactive effects of taking four psychotropic medications daily.

In more extreme cases, patients can become so unaware of these adverse effects that they begin to think that they are functionality improved despite how impaired they have become. Dr. Peter Breggin has referred to this phenomenon as intoxication anosognosia (i.e., medication spellbinding), which has been explained as a failure to perceive that one's irrational, uncharacteristic, and/or dangerous behaviours are being caused by the brain-damaging effects of psychotropic medication, and believing that psychotropic medications are helping despite obvious mental deterioration.[10] I can recall a patient

taking several psychotropic medications who deteriorated mentally over the course of five months under my care. She did nothing all day except watch television and listen to music. When I asked the patient about working, socializing, and exercising, the patient responded by telling me: "I am fine and feel well. I just like to relax all day. I like the way medications make me feel." I tried to help this patient for many months, but could never provide any form of treatment that was capable of overcoming the demotivating and flattening psychoactive effects of the psychotropic medications she was taking.

The example cited above demonstrates the ineffectiveness of psychotropic medication in facilitating recovery. When studies have evaluated patients more naturalistically (i.e., in a manner that is similar to office-based or outpatient medicine), the results have shown that the long-term use of psychotropic medication does not lead to recovery and is actually associated with worse outcomes for patients diagnosed with depression,[11-15] bipolar disorder[16-19] and schizophrenia.[20-23] For a more thorough review of the literature on the poor long-term outcomes associated with psychotropic medication, the reader is urged to review the work of Whitaker.[24,25]

One study worth describing in greater detail, which illustrates these poor outcomes, involved patients with psychotic disorders.[26] This study included 64 schizophrenia patients, 12 schizophreniform patients, 81 other psychotic patients, and 117 non-psychotic patients. All these patients were assessed as inpatients and then reassessed five times over the 15-year study period. At 15 years, the percent of schizophrenic patients in recovery while on antipsychotic medication was 5% compared to 40% of schizophrenic patients who were not on medication. In a more recent report by two of the same investigators, the schizophrenia patients in their sample who were treated continuously with antipsychotics over 15-year and 20-year periods showed considerable psychopathology and few sustained periods of recovery.[27] They even noted that the sample of schizophrenia patients who were not treated with medication for many years fared significantly better and had much better outcomes than the sample of schizophrenic patients on antipsychotic medication.

While problematic medication-induced psychoactive effects cannot always be well demarcated in patients who have histories of poor lifestyle habits, problems with interpersonal relationships or social competence, difficulties in maintaining employment, and/or habitual substance use/abuse, the psychoactive effects of psychotropic medications in and of themselves add a significantly harmful "biological" burden that makes the capacity for change and recovery much more difficult. The most unsettling biological effects have to do with adverse brain changes (i.e., damage) that result from psychotropic medication. These have been well elucidated by many investigators. Examples include the extrapyramidal syndromes (i.e., akathisia, dystonia, Parkinsonism, and tardive dyskinesia) associated with antipsychotic medication,[28] psychomotor and cognitive impairment associated with long-term benzodiazepine medication,[29] the depressogenic effects of antidepressant medication (especially, long-term),[30-32] and the cognitive deficits associated with psychotropic medications used to treat bipolar disorders.[33]

The increasing medicalization of mental health makes patients believe that their human struggles can be remedied by taking prescribed psychotropic medication (i.e., the "popping" of pills) instead of committing to the very difficult task of identifying and solving problems, and thereby making their lives better and more fulfilling in spite of setbacks and learning to become more tolerant of emotional discomforts. Middleton and Moncrieff discussed this in their provocative article which questioned the merits of antidepressant medication. They noted the following: "Symbolically, medication suggests that the problem is within the brain and well-being is dependent upon maintaining 'chemical balance' by artificial means. This message encourages patients to view themselves as flawed and vulnerable and may explain the poor outcomes of treated depres-

sion in naturalistic studies."[34]

Another unfortunate consequence of psychotropic medication is that prescription drugs can be disempowering. Most clinicians providing care communicate to patients that the best thing they can do for themselves is to take psychotropic medication. This touted biological "fix" often makes patients believe that this is the most important component of their recovery. Too much emphasis has been placed on the essentialness and/or beneficial properties induced by psychotropic medication. This confuses patients and leads them to believe that other components (e.g., psychological and spiritual development, counselling, and regular exercise) designed to facilitate recovery are incapable of providing sufficient results over time. This often pushes patients in a "medication" only direction and makes them less likely to use non-medication resources that could be extremely beneficial. Thus, in many instances, the provision of psychotropic medication hinders recovery and undermines allostasis, particularly as a result of disabling psychoactive effects (especially, long-term), and by demotivating effects that result when medications are promoted as the most important elements involved in treating serious mental illness.

(3) Psychiatric diagnoses

What happens to patients when their signals of mental distress are labeled with psychiatric diagnoses? Some patients find comfort and solace in receiving a psychiatric diagnosis since this legitimizes their suffering and provides succinct rational reasons for their misery. However, my clinical experiences have suggested quite the opposite. Patients often internalize their assigned psychiatric labels similar to patients who receive a diagnosis of diabetes or congestive heart failure. Typical doctor-patient interactions teach patients that their mental struggles are the result of some disease process requiring pharmacological treatment, or else the consequences will be disease progression much like untreated diabetes. Patients learn to identify themselves with their psychiatric diagnoses, and their problems thereby become very specific requiring precise psychotropic treatment.

When Mary went to her family doctor and received a psychotropic medication, she was told that her mental health struggles were the result of a biochemically "imbalanced" (i.e., diseased) brain. Instead of understanding Mary and her life problems, her family doctor disconnected Mary from her problems by assigning her psychiatric diagnoses and medicating her. Mary also became disconnected from her problems by believing in her psychiatric diagnoses with their assigned biological fix. The end result of this common clinical conundrum is that patients like Mary do little to enhance their lives beyond taking psychotropic medication since the most valued and recognized approach to their treatment involves the "medicalization" of their human struggles.

Another unfortunate consequence involves the stigma associated with psychiatric diagnoses. When patients like Mary believe they have a psychiatric problem requiring a biological "fix" this implies an underlying defect. Stigmatizing patients only deepens their psychic injuries and makes them more recalcitrant to grow and change since their humanity and struggles become secondary consequences of their presumed mental defects. As a result, patients feel more vulnerable, experience more shame, and feel less tolerant to life stresses. This interferes with patients' motivation to solve problems and implement positive changes and reduces their capacity to stabilize (i.e., makes achieving allostasis more difficult).

(4) Family and friends

Having a good support system is a definite asset and an integral part of recovery. Many families and friends of mentally unwell patients provide loving support and helpful encouragement. However, it is not uncommon for families and friends to become obstinate when a patient exerts his/her own ideas about treatment. When Mark mentioned to his parents that he would like to eventually discontinue his psychotropic medications, they told him that he could

only live in the family home as long as he remained on medication. This is a very common method by which families undermine progress in a loved one. When threats are used to manipulate a particular outcome this usually results in more acting out (i.e., frustration and/or anger) or the opposite (the patient becomes more inward, depressed, and socially isolated). None of these outcomes are helpful since they prevent an honest and frank negotiation about what the patient wants and how best to meet these expressed needs.

Another problem that patients experience is that family and friends become hypervigilant about the patient's day-to-day moods and behaviours. All people, not just patients, have normal ranges of emotional responses daily; these can vary from mild to very intense. These normal day-to-day fluctuations by patients are often thought to signal mental distress and possibly destabilization. An angry patient with a diagnosis of schizophrenia is thought to be destabilizing and psychotic as opposed to being justifiably angry about something. The patient has to "walk on egg shells" and maintain, on a day-to-day basis, a very narrow range of emotional responses to life events. Inevitably, the patient is unable to contain this narrow range (for such containment is abnormal) and will have moments where his/her emotional reactions can be sudden and even extreme when witnessed by family and friends. This often results in unnecessary pressures to take more psychotropic medication, and/or pressures to conform behaviourally in a manner that is unreasonable. Thus, threats and constant hypervigilance by family and friends do little to promote wellness or instill the confidence necessary to recover from struggles with mental illness. These factors undermine allostasis and deny patients the healing potentials and joys that loving and nurturing relationships can provide.

Psychosocial Strategies that Promote Allostasis and Functional Recovery

An individual's capacity to buffer the ill effects of allosteric overload arise from genetic endowment and life experiences.[3] Allostasis can be strengthened by psychosocial treatments aimed at increasing an individual's resilience to the stresses of life. Many resources can be utilized to strengthen a patient's circle of care, thus affording better outcomes and greater possibilities to live with happiness and purpose. This is all predicated, however, on the ability of the patient to recognize value in such treatments despite the fact that they are given mere lip service by the majority of clinicians who typically focus only on prescribing psychotropic medication.

(1) Access to proper shelter and regular meals

Some patients live in inadequate living environments where they do not feel safe, comfortable or secure. If their living situations remain problematic this will only trigger further mental distress. I had a patient who would dissociate when he felt physically threatened by the neighborhood surrounding his apartment. Only when he moved to a new apartment could he find solace and comfort in his living quarters. That moderated the frequency of his dissociation. It is important that patients have access to a residence that provides comfort, safety, and stability. As clinicians we need to ask our patients about their living situations and get in touch with their case workers or social workers to see what opportunities exist when there are problems with their place of residence. This seems like a lot of work, but it becomes impossible to move treatment in a positive direction when patients' basic needs for shelter are compromised.

Additionally, patients need to eat regular meals and have access to nourishing food. I have a patient who often runs out of money and then ingests sugar packets instead of real food. Sometimes he consumes more than 50 sugar packets in a day. This patient does receive enough money for his basic needs, but due to compulsive spending he often runs out of money prior to the month's end. In supporting this patient, I have encouraged him to access free meals and food banks. All patients, despite their issues and obstacles

(whether self-imposed or otherwise), need to eat regular meals and should be encouraged to use free resources. When patients cannot access regular meals, their treatment and progress is thwarted until they can eat normally.

(2) Psychotherapeutic service referrals and forming a therapeutic alliance

Patients should be referred for ongoing psychotherapy to better understand aspects of their life that might be impeding their growth and/or to receive emotional support. The most integral aspect of successful psychotherapy happens to be the therapeutic alliance. It is vital to the patient-clinician relationship that the psychotherapeutic encounter offers understanding, acceptance, a safe space without judgment or threats of hospitalization, and well-articulated and negotiated care. These "alliance" factors facilitate healing and will impart feelings of wellness while also reducing or moderating symptoms of mental distress. Research across several studies and meta-analyses has consistently shown a strong relationship between the therapeutic alliance and outcome (for an example of this research see Horvath et al[35]). In other words, the better the therapeutic alliance, the more likely that the patient will derive benefit from psychotherapy. These benefits are not just emotional, but also physical since structural brain changes have been associated with successful psychotherapy.[36] When people experience a sense of belonging and have the perception of feeling supported and acknowledged, their brains will structurally change in a positive manner rendering them less vulnerable to the stresses of life.

Among the many psychotherapeutic strategies available, I tend to refer patients to psychotherapists who also offer mindfulness-based approaches. Mindfulness practices teach patients to become more engaged in the moment while also allowing them to become more tolerant of emotional discomforts. Studies on mindfulness-based cognitive therapy have shown it to lessen excessive worry and emotionality.[37,38] For a thorough discussion on the beneficial neural or brain mechanisms implicated in mindfulness-based meditation, the reader is requested to review the paper by Zeidan et al.[39]

(3) Building social competence and interpersonal connections

Many patients like Mark become increasingly isolated even with the "gold" standard of modern psychiatric treatment. While Mark's friends have either remained in university or graduated and found regular employment, he spends most of the day alone without the usual social interactions that most people experience and take for granted. Mark's social network disintegrated as a result of his mental health struggles. Marks's only regular social interactions involve his parents and the weekly ACT team visits during which his case worker seems more concerned about medication compliance than Mark's emotional and physical wellbeing. Mary, on the other hand, is not socially isolated since she is married and has full-time work. Even though she is dreadfully unhappy she derives benefits from full-time work and having regular interactions with people.

Spending too much time with oneself can escalate mental distress while also eroding important social skills. Some of the most common consequences of social isolation are loneliness and boredom. One study found loneliness to be associated with all mental disorders, particularly depression, phobia, and obsessive-compulsive disorder.[40] Recent research has shown that boredom is correlated to depression and likely manifests in two forms: apathetic boredom and agitated boredom.[41] I have observed in clinical practice the negative impact that loneliness and boredom have upon socially isolated patients, especially those who live on their own and receive disability support. Most of these patients lack a regular routine and a daily schedule. If social isolation is not managed aggressively it can eventually lead to an early death when patients enter into their fifth decade of life.[42] Only through interactions with other people can patients develop the neces-

sary social competence and skills required to foster meaningful relationships. Social experiences teach patients about themselves through the implicit and explicit feedback they receive and help them develop the necessary social skills and competence to maintain solid relationships over their lifetimes.

To assist patients in overcoming their social isolation, I work with them to develop a weekly routine that keeps them busy while also providing important social challenges. Patients should be encouraged to volunteer and participate in library groups, reading clubs, adult education, and regular physical activity (e.g., walking or running groups/clinics). Most patients live in a community with a library and a community centre and thus they have easy access to regular social events in safe, nonthreatening settings. Those can help to build social competence and maintain interpersonal relationships.

Since many patients develop social anxieties as a result of their isolation, I refer patients to Toastmasters (www.toastmasters.org) when appropriate. It builds confidence in public speaking and helps patients become more socially competent while working through their social awkwardness. In an article discussing alternative psychotherapeutic approaches for social anxiety disorder, Toastmasters was highlighted as an alternative that provides positive social exposure while fostering confidence in public speaking.[43] Since many patients feel nervous being around other people, working on their public speaking skills in a no-pressure setting pays huge dividends with respect to their social competence and confidence over time. One of my patients with schizophrenia became so engrossed in the Toastmasters' experience that he ascended the ranks and became the master host of his local group. The experience helped him make friends with other members and following the weekly meeting he would often tell me in delight about the fun he had at the local pub.

(4) Getting support

Patients need to feel supported by their peers and not just from clinicians providing care. Some of my favorite resources include 12-step groups (e.g., Alcoholics Anonymous and Emotions Anonymous), peer groups (e.g., Hearing Voices Network), and/or specific mental health support groups (e.g., Toronto Shyness and Social Anxiety Support Group). The majority of these resources are free and provide excellent support. They open up the possibility of creating lifelong friends or at least a consistent social network. Something extremely meaningful and therapeutic often happens when a person with lived experience connects to another person for similar reasons. This support reduces mental distress signals and helps patients remain focused on their wellness while also forging important social connections that provide a sense of belonging, the feeling of not being so alone and community.

(5) Engaging in purposeful work

For many patients, the idea of working has not been mentioned by their clinicians since the visit focuses predominantly on their mental symptoms. Our patient Mark does nothing all day and yet, with the right support, he is capable of securing regular work. He just needs someone to motivate him without focusing on his lack of self-worth and his mental distress. Mary, on the other hand, has a full-time job, but she is on thin ice since she has become impersonal and detached from her coworkers. With the right support Mary could learn to socialize better at work. That might help her to relax and feel less anxious, and perhaps she might find work enjoyable again.

Like all people, patients need to feel productive through regular work and develop a sense that they are contributing to society. This work does not need to involve money, but it needs to be regular and it needs to provide enough of a challenge that the work does not become mundane and boring. Regular work should not be overly stressful or too difficult; otherwise, it becomes another trigger of mental distress. In other words, work needs to strike a balance between something challenging (but not too onerous or stressful) and something achievable (but not over-

ly boring or mundane). A life coach or career counselor can help patients figure out what work or volunteer positions are most suitable for their needs. Free career counselling is often available if patients are motivated. When patients secure the right type of part-time or full-time employment and/or regular volunteer work, their symptoms improve and they feel an increased self-confidence and mastery over their problems.

(6) Developing a self-management strategy

Self-management denotes the ability of a patient to pursue an active wellness plan, to recognize his/her mental distress signals, and to have a plan in place when things begin to go awry. The best way in which patients can do this work is through a programme called the Wellness Recovery Action Plan (WRAP; www.mentalhealthrecovery.com), which was designed by Mary Ellen Copeland, PhD, a Vermont psychologist who has lived with and recovered from mental illness herself. Copeland developed WRAP for patients with mental health issues. It has approximately 20 citations indexed in PubMed. When patients complete this self-management tool they end up with a package of self-help planning and coping strategies, which include: (1) a wellness toolbox; (2) a daily maintenance plan; (3) the identification of triggers and an associated action plan; (4) the identification of early warning signs that things are breaking down and an associated plan; (5) crisis planning; and (6) post-crisis planning.[44]

Research unanimously supports this approach and found that when patients do this work they learn more about recovery and develop improved self-awareness by integrating WRAP into their daily lives.[45] Engaging in WRAP leads to positive changes in patient's knowledge, skills, and attitudes toward recovery. This often inspires and empowers them and can even be life changing.[46] WRAP has been subjected to formal studies that have shown it to reduce symptoms of anxiety and depression,[47] and psychiatric symptoms in general.[48] Even among patients with severe and persistent mental illness, WRAP was able to enhance hope, improve quality of life and reduce psychiatric symptoms.[44]

Patients can pursue WRAP on their own by purchasing books and completing the required exercises individually and/or with the help of a social worker, a case worker, a friend, or a family member. Patients can also enroll in a WRAP course, which is my preference since it motivates patients to take an active role in their recovery while also fostering social connections with people who have similar lived experiences.

Therapeutic Lifestyle Changes

Traditional therapeutic lifestyle changes (TLCs) need to be incorporated into an overall recovery plan because adequate physical activity, sufficient sleep, a healthy diet, and abstinence from smoking and other substances of abuse all buffer against allosteric load.[4] Dr. Roger Walsh has authored the most authoritative paper on this topic. He noted that the primary benefits from TLCs is that they reduce primary psychopathology, whereas the secondary benefits provide neuroprotection, reduce age-related cognitive decline, reduce neural shrinkage, and improve physical health, self-esteem and quality of life.[49] Walsh's review of the literature shows that TLCs can treat multiple psychopathologies while bolstering psychological and social wellbeing, and stabilizing and optimizing cognitive capacities and improving neural functions. Here I will summarize some of the key findings from Walsh's paper and explain why they need to be part of every patient's recovery plan.

(1) Regular exercise

Exercise favorably alters serotonin metabolism, improves sleep, increases endorphins (e.g., the "runner's high"), enhances self-efficacy and self-esteem, interrupts negative thoughts and ruminations, reduces psychosomatic muscle tension, increases cognition, increases brain volume (i.e., both grey and white matter), and improves vascularization, blood flow, and other functional measures.

If you recall, Mary exercises only once

each week or less often, and Mark does not exercise. Both patients would find that exercise usually helps to moderate symptoms while enhancing the quality of life. It appears that neither of these patients were encouraged to exercise by their conventional care providers, or exercise was not a focus of their treatment. It should be since the positive effects of regular exercise cannot be disputed. In my clinical practice I negotiate with patients on how often and how long they should exercise. Optimally, I would like them to exercise aerobically for 30-60 minutes every day or every other day, but for many patients this is not possible. It is important that exercise be presented like any symptom-moderating treatment. Patients need to be properly informed about the value of consistent exercise throughout their lifetimes. Some patients can only manage 10-15 minutes three times each week while other patients can engage in lengthier and more frequent exercise. The goal is to motivate patients and encourage them to find joy in exercise and moving their bodies. I have found that something clearly shifts in a positive direction when patients become regular and avid about exercise.

(2) Diet modifications

Many patients do not understand the value of eating well and its potential symptom-moderating effects. The clinician should discuss diet and encourage patients to modify their diets to include: (1) lots of multicolored fruits and vegetables (a "rainbow diet"); (2) some fish, preferably cold deep-seawater fish that is low or without measurable levels of mercury (e.g., wild salmon); and (3) less excessive calories (i.e., eliminate or significantly reduce high-caloric nutrient-devoid foods like processed foods and junk foods).

Research has shown that mood can be improved if diets are nutrient-rich, especially if supplemented with minerals.[50] A diet low in sodium and high in potassium was shown to improve overall mood, and to specifically improve depression, tension and vigour.[51] Overall, an optimal diet should be as close to being pescovegetarian as possible since this helps to prevent and possibly ameliorate psychopathologies across the lifespan. This type of diet is nutrient-dense and contains lots of potassium.

(3) Connecting to nature

Patients need to be encouraged to spend more time outdoors and in natural settings. Spending too much time in cities and densely populated areas impairs the ability of the perigenual anterior cingulate cortex to inhibit activity in an overactive amygdala. An overactive amygdala contributes to increased stress and psychiatric symptoms.[52] Patients who only have limited access to nature risk developing disturbances of mood, sleep, and diurnal rhythms, as well as short-term impairment in attention and cognition. No pills can mimic the beauty and vastness of nature. Spending time in natural settings enhances cognitive, attentional, emotional, spiritual and subjective wellbeing.

(4) Limit media immersion and hyperreality

Many of my socially isolated, mentally unwell patients like Mark spend too much time on the internet. Instead of interacting with people, the internet becomes their only connection to people and the larger world. Mary has a different issue, but no less damaging to her psychiatric status. She does not stop working and she often uses her access to the internet to continue her full-time job after dinner. Excessive media immersion is associated with psychological dysfunctions (i.e., "techno-stress") that include disorders of attention, cognition, overload and addiction. Many of my socially-isolated patients have unfortunately been "fueled" by the internet and developed pathological gambling and/or pornography addictions. Clinicians need to discuss this with patients and educate them on the value of limiting internet exposure, since this simulated reality can become more real to patients than actually living in the non-digital world. Patients need to understand the psychiatric implications of spending too much time on the internet and not enough time with real people in the real world.

(5) Religious and spiritual practice

According to Walsh, approximately 90% of the world's population participates in religious or spiritual practices. For many individuals, having a religious or spiritual focus improves their ability to manage the stresses of life. When the focus of such practices centres on concepts like love and forgiveness, it can be very helpful, as opposed to notions of punishment and guilt that can undermine psychological wellbeing.

Numerous health indicators have been shown to benefit from spiritual practices. These include improved psychological, relational and marital wellbeing, as well as lowered rates of anxiety, depression, substance abuse and suicide. Attending a weekly religious service increases lifespan by approximately seven years compared to individuals who do not commit to some type of weekly religious service.

Mary used to attend church on Sundays, but after her husband pronounced that type of involvement "silly" she stopped going. There is nothing silly about a person's religious or spiritual practice, especially since such practices can bolster resilience and facilitate a more positive psychological outlook. Mary would benefit from re-engaging with her faith on a regular basis. I often discuss such ideas with patients despite that fact that, as Walsh points out, few professional do. It is important for clinicians to ask patients about their religious and spiritual practices. Simply reminding patients can be a powerful way to reinvigorate such practices and promote psychological wellbeing.

Even though this appears to be mostly positive, clinicians need to consider deeper issues when discussing religious and spiritual practices with patients. Only through lengthy discussions will clinicians begin to understand how a patient endorses the religious concepts and ideas that he/she was exposed to over time. These types of discussions impact a patient's development and psychological health for they range from prepersonal notions (i.e., literal acceptances of how one should conduct his/her life) to personal ones, and even transpersonal beliefs and ideas. It is easy to imagine the types of psychological distress that can ensue if various life issues run counter to a patient's religious beliefs. For example, how would a person of strong Catholic faith deal with having had sex prior to marriage or an abortion? Along those same lines, what is someone of strong Catholic faith to do when he no longer wants children and yet wishes to have sexual relations with his wife? These situations can challenge a patient's prepersonal, personal and even transpersonal religious notions and, if not dealt with, they can be a constant source of psychological distress. Clinicians need to be aware that while religion and spiritual practices can be a tremendous source of psychological health, simply telling a patient to reconnect to his/her faith might not be complete advice unless a patient works through religious or spiritual issues that have been negatively impacting his/her state of mind.

(6) Getting sufficient sleep

Patients do better when they can get at least 6-8 hours of minimally interrupted sleep. Many patients lack an adequate understanding of good sleep hygiene so they should be educated and encouraged to develop good sleep habits. Some patients sleep during the day and are awake all hours of the night, which further isolates and impairs them from interacting with people. Some patients cannot quiet their minds due to continual ruminations, and feel so anxious that regular sleep becomes impossible. Some patients worry so much about sleeping that their sleeping anxiety undermines their capacity to fall and remain asleep during the night. Of course, many other mental incarnations can impair sleep or cause disrupted sleep patterns. Nevertheless, it is essential that sleep be improved since prolonged impaired sleep will undermine any patient's mental state.

If a patient's mental state does not improve despite a sound holistic sleep plan, the patient may have an undiagnosed sleep disorder. For example, obstructive sleep apnea is commonly comorbid with psychiatric disor-

ders, especially depression and anxiety.[53] Also, having a psychiatric illness and/or taking psychotropic medication typically increases a patient's susceptibility to sleep disorders such as insomnia, obstructive sleep apnea, and REM sleep disorders.[54] While a thorough discussion of sleep architecture and its proper assessment is beyond the scope of this paper, it is important that sleep issues are addressed when managing patients who have mental health issues. Patients should be referred to a sleep clinic when treatment progress is slow or uneventful, or when it appears that an underlying sleep issue is present or probable.

Orthomolecular Interventions

Our body (which includes the brain) demands a constant supply of micronutrients found in foods and through supplementation. If the body's needs are not met, then the individual will suffer from the consequences of micronutrient insufficiency, and in more extreme cases, malnutrition. Based on these known facts, the body is physiologically dependent on receiving a complete "sum" of around 40 micronutrients on a daily basis, otherwise, signs and symptoms of nutritional inadequacy will manifest and can be responsible for a myriad of physical and psychological perturbations.

In addition to micronutrient insufficiencies, our bodies have their own unique biochemical needs that cannot be met from diet alone and demand the proper provision of micronutrient supplementation. This is where orthomolecular therapies (i.e., combinations of diet modifications and/or supplementing vitamins, minerals, amino acids, and/or essential fatty acids) can have a tremendous impact since they can moderate symptoms of mental distress and improve a patient's capacity to emotionally (i.e., affectively) regulate.[55-66]

Many orthomolecular clinicians have witnessed the beneficial effects of optimal orthomolecular therapies. Patients often return weeks or months later feeling much better, attributing much of their progress to the prescribed orthomolecular regimens. Putting together the proper orthomolecular regimen requires a comprehensive history, physical examination, laboratory testing (when indicated), and meticulous trial and error. Patients need to understand implicitly and explicitly that finding the "right" mix of orthomolecules takes time and can only be achieved through an effective collaborative process with their treating clinicians.

Here I will reference select publications which show benefits from single or combination orthomolecules upon general stress and/or extreme psychological stress (i.e., suicidality and subthreshold psychosis). Even though each treating clinician will prescribe specific orthomolecular therapies according to the process described above, these select publications support the use of several "core" orthomolecules either alone or in combination with other orthomolecules and should form the backbone of any individualized patient plan.

(1) Vitamin C

When three grams of timed-release vitamin C was given in divided doses throughout the day to 60 healthy adults for 14-days, blood pressure, cortisol, and subjective response to acute psychological stress were all palliated.[67] In another study, when 500 mg of vitamin C was included in a multiple vitamin/mineral preparation (i.e., Berocca®) that also included modest amounts of B-complex vitamins, 100 mg of both calcium and magnesium, and 10 mg of zinc, at the end of the trial the 40 men that were randomly assigned to take the nutrients for 28 days demonstrated statistically significant reductions in perceived stress.[68] Even though the latter study did not rely on vitamin C exclusively, preliminary human research has shown this vitamin to moderate stress both physiologically and subjectively. Basic animal research has shown that the adrenal cortex and the adrenal medulla both accumulate high levels of vitamin C and that vitamin functions as a crucial cofactor in catecholamine biosynthesis and adrenal steroidogenesis.[69]

Based on this data, it appears that 500-3,000 mg/day of vitamin C should be prescribed as a treatment to attenuate stress. Timed- or sustained-release vitamin C

might be preferable since it is retained longer within the body,[70,71] even though research has shown considerable intersubject variation in vitamin C absorption from different formulations.[72]

(2) B-complex vitamins with a broad-spectrum multiple vitamin/mineral supplement

Optimum doses of B-vitamins should be prescribed (in combination with a multiple vitamin/mineral supplement) since these essential nutrients are particularly susceptible to cortisol mobilization that results in their depletion,[73] and they also possess stress-moderating effects.[68,74,75] At the end of a 12-week study , during which 42 adults were randomized to the nutritional treatments (B-complex vitamins plus modest amounts of vitamin C, vitamin E, calcium, magnesium, potassium, lecithin, choline bitartrate, inositol, and the botanical medicines *Avena sativa* and *Passiflora incarnata*), there were significant reductions in personal strain, confusion and depressed/dejected mood.[74]

Another of these studies evaluated the effects of a B-complex supplement (i.e., a whole nutrient natural source extract from probiotic colonies containing vitamins B_1-B_{12}, folate, PABA, biotin, and inositol) on depressive and anxiety symptoms among adults diagnosed with major depression or other forms of depressive disorders.[75] The 30 study participants taking the B-complex vitamins, had notable continuous improvements in depressive and anxiety symptoms compared to the participants in the placebo group. The B-complex group also showed significant improvements on the mental health scale of the Study Short Form 36 (i.e., SF-36).

Another study involving micronutrients is worth mentioning since it dealt with the effects of a broad-spectrum multiple vitamin/mineral supplementation combined with herbal extracts (i.e., B-complex vitamins, lysine, antioxidants, minerals, and some herbal extracts) upon mood and stress levels.[76] In this study, 25 men randomized to the nutritional-herbal treatment for eight weeks showed a significant reduction in their overall score on a depression anxiety stress scale (i.e., DASS), as well as improvements in their alertness and general daily functioning.

To combat stress, it appears that optimum doses of a well-rounded B-complex supplement should be combined with a daily broad-spectrum multiple vitamin/mineral supplement to support patients' psychological wellbeing.

(3) Omega-3 essential fatty acids

When patients feel suicidal, they typically experience acute distress and discomfort. No matter how well clinicians monitor patients for suicidal ideation, there are no reliable ways to be certain that patients won't attempt suicide. In a study that evaluated 33 medication-free depressed subjects over a two-year period, seven of the subjects attempted suicide.[77] Testing showed that their lower docosahexaenoic acid (DHA) percentage of total plasma polyunsaturated fatty acids and higher omega-6-to-omega-3 ratio predicted suicide attempts among the depressed patients over the two-year study period. Even though these results are preliminary, there is no reason to wait for larger trials since this data might suggest the need to moderate suicide risk among psychologically-distressed patients. It makes sense to ensure that all patients' diets are modified to minimize levels of omega-6 fatty acids and maximize foods high in omega-3 essential fatty acids, and take a daily omega-3 essential fatty acid supplement (i.e., providing ample amounts of DHA such as 500 mg or more).

Outside of suicidality, patients can experience other distressing symptoms including psychosis. A trial investigated the impact of an omega-3 essential fatty acid supplement among subjects who were having psychotic symptoms (i.e. subthreshold psychosis), but had yet to progress to having a primary psychotic disorder (e.g., schizophrenia, schizophreniform, bipolar, and schizoaffective disorders).[78] The subjects were randomized to receive a daily dose of 700 mg of EPA, 480 mg of DHA, and 7.6 mg of mixed tocopherol for 12 weeks, and then monitored

for 40 weeks. The total study period was 12 months. At the conclusion of the trial, 2 of 41 subjects in the treatment group transitioned to psychotic disorder compared to 11 of 40 subjects in the placebo group (4.9% versus 27.5% respectively; p=0.007). Compared to the placebo group, the use of omega-3 essential fatty acids reduced positive symptoms (p=0.01), negative symptoms (p=0.02), general symptoms (p=0.002), and enhanced general functioning (p=0.002).

Given how important it is to moderate suicidality and/or symptoms of subthreshold psychosis, it behooves orthomolecular clinicians to prescribe an omega-3 essential fatty acid with at least a two-to-one ratio of EPA to DHA (e.g., 1,000 mg of EPA and 500 mg of DHA).

Conclusion

There are many reasons why patients struggle to cope when they experience medical, metabolic and psychological issues that negatively impact their mental health. Many patients have difficulty achieving adequate allostasis after traumatic experiences or prolonged distress. It is imperative that we upgrade our current standard of care by assessing, monitoring and providing ongoing encouragement and support to complement the provision of orthomolecular medicines. We must be mindful and sensitive to patients' unique life experiences and consider whether oppressive forces may undermine their quality of life. We must engage our patients to develop holistic recovery plans that include the appropriate use of psychosocial strategies and TLCs as well as "core" orthomolecular therapies.

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Competing Interests

Dr. Prousky is currently a consultant for Pascoe Canada, a company that sells natural health products.

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