



*the
Flying Publisher Guide to*

Complementary and Alternative Medicine Treatments in Psychiatry

2012

Stradford, Vickar, Berger, Cass



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The Flying Publisher Guide to Complementary and Alternative
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2012 Edition

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Preface

As with all medical disciplines, psychiatry has evolved from its humble beginnings as an organized profession in the 1800s. Moving from the simple concept of warehousing the mentally unwell in asylums to seeking effective treatments in the past century, psychiatry has experienced a number of phases as its practitioners, like mice in a maze, seek to find shorter and surer routes to health for their clients.

Despite that progress, mental disorders remain one of humanities most resistant ills. We still find a familiar ring to the words of Emil Kraepelin, the “Father of Psychiatry,” in his essay “One Hundred Years of Psychiatry,” written nearly a century ago: “The magnitude of the efforts to be expended on our task, the impenetrable darkness that hides the innermost workings of the brain...must cause even the most confident investigator to doubt whether it is possible to make any appreciable progress toward psychiatric knowledge and understanding.”

Each generation of physicians, however, continues to learn from the last. Today’s psychiatrist has not only the tools of his predecessors, but access to an unprecedented and continuous advance in scientific research, thanks to modern global communication networks.

Thus safe, effective alternative methods of treatment from all corners of the earth that can complement or, in some cases, supplant pharmaceutical and other mainstream therapeutic tools, have gradually come to the attention of physicians and the public alike. As research continues to unfold, such treatment options, their efficacy demonstrated through published studies, shed more light and hope on the “impenetrable darkness” that the profession has confronted since psychiatry’s inception.

The Editors
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1. Promoting Wellness in Mental Health: The CAM Approach in Psychiatry

Dan Stradford

In 2003, after examining the American psychiatric system for a year, the President's Freedom Commission on Mental Health recommended "a fundamental transformation of the Nation's approach to mental health care. This transformation must ensure that mental health services and supports actively facilitate recovery, and build resilience to face life's challenges." (President's New Freedom Comm 2003)

Three years later an extensive study covering eight states revealed that the seriously mentally ill in America now die 25 years earlier than the general public. This is a 10- to 15-year shorter lifespan than they had less than two decades earlier (Parks 2006). "We're going in the wrong direction and have to change course," commented lead author Joseph Parks, director of psychiatric services for the Missouri Department of Mental Health (Elias 2007).

The Parks report, published for the National Association of State Mental Health Program Directors, stated: "State Mental Health Authority (SMHA) stakeholders need to embrace two guiding principles:

1. ***Overall health is essential to mental health.***
2. ***Recovery includes wellness.*** (Bold, italics, and underline in original.) (Parks 2006)

These two principles, of course, apply to all psychiatric clients, not just those in the public health system. The concepts of “overall health” and “wellness” means we must address the whole person if we are to improve our chances of facilitating the recovery of mental health.

Currently most psychiatric treatment attempts to readjust the individual’s neurological biochemistry through pharmacology. To a lesser extent, psychotherapy is used to address trauma and life situations. While these tools have a level of effectiveness and may be sufficient for some, they collectively fall short of addressing “overall health.”

This has not escaped the public’s notice. Seeking more effective healthcare for psychiatric and other medical issues, they have increasingly turned to other forms of treatment—commonly referred to as complementary and alternative medicine or CAM. In 2002, 36% of adult Americans used some form of CAM. If prayer was included, that number swelled to 62% (Barnes 2004). By 2007 CAM use had increased 14% (Su 2011).

In psychiatry, 54% of women with depression seek relief through CAM therapies. Reasons given are a preference for a “natural approach,” wanting treatments that are congruent with their own beliefs and values, and experiencing unpleasant side effects or poor results from orthodox treatment (Wu 2007). Among psychiatric patients in general, 63% use some CAM modality (Elkins 2005).

The past decade has also seen a burgeoning of articles in the psychiatric literature on the use of such CAM treatments as nutrients (e.g., fatty acids, folate, vitamin D), yoga, light therapy, acupuncture, and exercise. A cursory search of the same journals finds that CAM treatments have been discussed for a range of disorders, including depression, bipolar disorder, schizophrenia, ADHD, dementia, and obsessive-compulsive disorder (OCD).

What is CAM?

But what does it mean to treat the whole person or overall health? It means considering the full array of factors that can impact mental health, including:

- Physical
- Mental
- Environmental
- Spiritual
- Energy influences

It also means therapeutically addressing the individual through all channels that can affect mental health for the better, including:

- Physical
- Mental
- Communication
- Perceptual

Each individual is unique. No human physiology is exactly like another, and no life experience is the same for any two people. So in our medical literature we almost never find a 100% response to any treatment. What may be effective therapy for one individual, such as the adjustment of neurotransmitters, may be ineffective or deleterious for another.

Even within a single diagnosis such as schizophrenia, the combinations of possible contributing factors—physically, genetically, prenatally, and environmentally, just to name a few—could be almost infinite.

Thus the advantage of the CAM toolbox—a variety of approaches that account for human individuality and that may be able to raise overall health sufficiently to tip the scales toward recovery. If a woman with depression can get a 10% improvement each with nutrients, diet change, exercise, acupuncture, and yoga, we have a 50% gain without side effects and with improved physical health.

While to some psychiatrists CAM may appear to be a random series of “new age” therapies that whimsically catch media attention, the larger message that has emerged is that CAM reminds us to look at the entire individual rather than just the brain when dealing with psychiatric disorders.

The additional advantage of CAM is that, while pharmacology can help manage symptoms, it does not necessarily raise overall health and can, in fact, mask signs that unhealthy conditions exist. This can worsen health and well-being in the long run. The CAM approach lets us look at the whole person to increase the chances of those negative conditions being uncovered.

Treating the Body

It is easily observed that physical health affects mental health. Even in Dickens’ *A Christmas Carol*, published in 1843, he observed that one’s senses and perceptions could be altered by the body: “A little thing affects them. A slight disorder of the stomach makes them cheats. You [the ghost] may be an undigested bit of beef, a blot of mustard, a crumb of cheese, a fragment of an underdone potato.”

The array of physical conditions that can impact mental health is so vast that many books have been written on the subject and the topic remains substantially incomplete. We have devoted a chapter to this subject but, suffice it to say, the importance of proper physical screening of psychiatric patients cannot be overemphasized.

Additionally, as Dickens noted, diet plays a significant role in mental well-being and overall health. Lack of proper nutrition, food allergies that present with psychiatric symptoms (such as depression and anxiety), food additives that some individuals are sensitive to, and an excess of junk food can negatively affect mood and behavior, sometimes to a pathological level.

Toxic exposures of many kinds can dramatically influence mood, perceptions, and actions. Pesticides, mercury, gases, pollutants, lead, and even mycotoxins can all be suspects in

triggering mental disorders. A subset of toxic exposure would include unwanted effects of medication. Many drugs, particularly in combination, produce psychiatric symptoms.

Pain can sometimes be a hidden contributor to mental suffering. Dental issues, back pain, an improperly healed surgery, a hidden fracture, foot anomalies—any kind of pain-producing ailment—may go unnoticed by the physician, but shouldn't. Also, many patients may fail to report the pain due to their inability to express themselves or because they have become accustomed to it.

Perceptual issues, particularly hearing and vision impairment, can often go overlooked by doctor and client, yet they can result in psychiatric sequelae such as hallucinations, anxiety, depression, and confusion.

In addition to treating physical disorders, clinicians can use the body as a channel for therapeutic intervention. A number of physical treatments have been found to improve mental health.

Numerous nutrient therapies are efficacious for a panoply of psychiatric disorders. Some treatments, such as omega-3 fatty acids, have become so commonplace that they are now considered best practice in mainstream medicine.

Herbal treatments have a role in psychiatric medicine and a number of them have been reported safe and effective in the literature.

Exercise has been shown to be very effective as a mood elevator and lack of exercise can impair the quality of life for any psychiatric patient as well as retard recovery.

A host of other CAM physical approaches can change mental and emotional aspect including chiropractic, yoga, acupuncture, acupressure, breathing exercises, dance therapy, and balance therapy.

Environmental Influences

In the early 1900s, when psychoanalysis was the dominant force in psychiatry, Sigmund Freud wrote, "If a man has been his

mother's undisputed darling, he retains throughout life the triumphant feeling, the confidence in success, which not seldom brings actual success along with it." (Freud 1917)

As time has marched on, however, and research has accumulated, we have come to see that many environmental influences—besides one's parents—can affect the mind. And, of course, these influences can be positive or negative.

The person's job can be a risk factor. Many professions use chemicals that can have toxic effects on the brain, including farming, metal plating, laboratory work, mining, and certain types of manufacturing.

Where one lives or where one has recently been can be important. Toxic waste, a paucity of certain nutrients in the region's soil, political upheaval or other environmental threats can and do make a difference to mental well-being.

Chronic exposure to power lines, for example, has been shown to increase suicide rates up to threefold in electrical workers (Wijngaarden 2000). Also, high-density negative ions in the air, as are seen near waterfalls, produce a 43% improvement in depression (Terman 2007). Exposure to outdoor greenery as in parks, meadow, and rural settings causes significant improvement in symptoms of ADHD (Kuo 2004). A review of people doing exercise amongst outdoor greenery such as walks and gardening found that 94% of respondents felt it improved their mental health and 71% reported decreased depression (MIND 2007).

Spiritual Matters

A survey of 1144 American physicians found that amongst all doctors, psychiatrists are the least likely to be religious. Additionally, nonpsychiatrist physicians who are religious are less willing to refer their clients to a psychiatrist (Curlin 2007).

By contrast, only 15% of the American population defines itself as atheist, agnostic, or of no religious affiliation (Kosmin 2008).

Religion plays a major role in the lives of a great many, and it can have profound effects on the mental health of its adherents.

Individuals can suffer great anxiety and depression over a religious issue, be it guilt from transgressions, abortion, infidelity, pornography addiction, dishonesty, child abuse, divorce or other weighty matters. Fear of going to hell or being excommunicated can become an obsession. They may not think to mention such things to a psychiatrist since he is a doctor and not a priest/pastor/rabbi.

People of Eastern faiths have additional issues and traditions that could trouble them and that are worth exploring.

The simple question “Do you go to church?” or “Do you have a spiritual practice?” could open the floodgates to information and insight into the case as well as an avenue of recovery for the individual. Such a person could benefit from religious counseling perhaps more so than any other form of treatment.

Addressing the Mind

Traditional treatment of mental and emotional issues involves psychotherapy, some form of practitioner-patient interchange that allows the client to discuss trauma and life issues with the hope of unburdening the individual to some degree or leading him/her towards solutions for the issues he/she faces.

But other approaches have emerged—many from Asia—that provide a different look at the mind and living which offers therapeutic benefits.

The concept of mindfulness or being in the present has been imported from India, China, and neighboring regions and encourages quieting the mind rather than engaging it or delving into it continuously for solutions.

This practice of quieting thought can have many forms, including physical actions such as breathing exercises or taking walks and has become a popular method for calming anxiety, reducing obsessive thought, and relieving depression.

Therapy Through Perceptions

Our perceptions—sight, hearing, smell, etc.—provide a channel for accessing cerebral activity and processes. Numerous modalities have arisen that utilize these pathways to manipulate mental processes in often simple but powerful ways

Aromatherapy has been used effectively to calm and improve behavior. Lavender oil, for example, reduces agitation in 60% of dementia patients (Holmes 2002).

Music therapy takes many forms, from listening to music to performing it. It has been found helpful for many disorders and diminishes symptoms of schizophrenia (Talwar 2006) and depression (Maratos 2008).

Neurofeedback is another treatment that functions through sight and sound. While numerous forms of the therapy exist, they generally consist of clients looking at lights or video screens programmed to shift brain wave patterns. Earphones may be used with accompanying sound. Among other things, it is effective for depression, anxiety and obsessive-compulsive disorder (Hammond 2005) and symptoms of ADHD (Arns 2009).

Light therapy is now an established remedy for Seasonal Affective Disorder and is a simple option to medication for some.

Massage therapy is a combination of touch and muscle manipulation that can have a relaxing effect. It has been found to significantly reduce symptoms of depression (Hou 2010) and anxiety disorder (Sherman 2010).

The Importance of Hope

Hope is an essential element of recovery. Patients and caregivers who have hope have less depression and more reason to believe they will succeed (Cheavens 2006).

A patient who is given one therapy as his only option can lose all hope if it fails. Many psychiatric patients live lives of quiet desperation, suffering side effects from meds they dislike but feeling they have no other choice.

A client who is told there are other possible modalities of treatment—such as CAM therapies that can boost chances of symptom reduction or recovery—is given hope.

Even if a treatment fails, if other options are on the horizon, this expectation can keep a patient working toward wellness and putting one foot in front of the other on the road that may lead to partial or full recovery. It can even cause the patient to make improvements in his lifestyle as he strives to do his part in the recovery effort.

For many, hope is the most powerful medicine of all.

Summary

Of all the fields of medicine, few require as holistic a view as psychiatry. So many variables can impact mental and emotional function—and so many approaches can improve it—that the psychiatrist of today is hard-pressed to keep abreast of the investigational and therapeutic tools at his disposal.

Additionally, the societal push which has created the demand for CAM is a desire for greater wellness and overall health. This means that pharmaceutical treatments in psychiatry, which can bring with them dramatic side effects such as metabolic syndrome, renal failure, anorgasmia, and obesity, are being reevaluated by some as to whether they should always be a first and only form of treatment.

In pursuing true recovery and wellness, the CAM approach offers the practitioner a large arsenal of options for progressively working towards a state of wellness for his client. With an understanding of the therapeutic tools at his disposal, the clinician's—and the client's—chances of success are markedly improved.

2. The Comprehensive Medical Exam in Psychiatry

Dan Stradford

Virtually every medical student has been taught, “When you hear hoofbeats, don’t expect to see a zebra,” a phrase coined by Dr. Theodore Woodward in the late 1940s (Soto 1991). The gist is that when a physician sees symptoms, he should consider routine diagnoses, not exotic ones.

Psychiatrists are often taught the same phrase regarding psychiatric symptoms that are created by non-psychiatric medical disorders—that although they exist, these conditions are, in fact, rare and unlikely. Unfortunately, this line of thinking has caused many serious medical conditions to go undiagnosed. Factually, physically-created mental and behavioral symptoms are not uncommon and certainly not as rare as a zebra running wild in the Western Hemisphere.

From 5–40% of psychiatric patients are found to have medical ailments that would adequately explain their symptoms (Allen 1995). Additionally, up to 25% of mental health patients are found to have medical conditions that exacerbate psychiatric symptoms (Christensen 2009).

In older patients with first-time psychiatric symptoms, the likelihood of underlying physical contributors is even greater. In

a Danish study of cancer rates in first-time psychiatric patients, lead author Michael E. Benros remarked, “The overall cancer incidence was highest in persons older than 50 years of age admitted with a first-time mood disorder, where 1 out of 54 patients would have a malignant cancer diagnosed within the first year.” The overall incidence of cancer was increased almost 4-fold and the incidence of brain tumors was increased 37 times. He concluded: “Our study illustrates the importance of making a thorough physical examination of patients with first-time psychiatric symptoms.” (Benros 2009) (Nelson 2009)

Despite the commonality of psychiatric symptoms that are created by non-psychiatric medical disorders, the subject is rarely given the vigilance it deserves. A text on the topic did not even exist in the Americas until 1967 when Dr. Sydney Walker wrote *Psychiatric Signs and Symptoms Due to Medical Problems* (Walker 1967). A survey carried out in 2001 by the nonprofit Safe Harbor (of which the author is president) found that the 100,000 outpatients seen annually by the Los Angeles County Department of Mental Health were routinely not given medical exams.

One reason for this oversight is because diagnoses such as schizophrenia, bipolar disorder, and even major depression are often thought of as discrete disease entities, when in fact, they are not. They are syndromes of generally unknown etiology. Because the causes of these syndromes have evaded investigators for centuries, there is a tendency to consider the etiology as unknowable, when, through a thorough medical exam and differential diagnosis, the possibility exists that the causes of even the worst psychiatric manifestations may be determined and may even be completely treatable.

Further, it has become customary to treat psychiatric symptoms pharmaceutically, without considering the cause. Additionally, once a patient has been labeled with a psychiatric disorder, there is a tendency on the part of doctors and hospital staff to not look further. Lastly, a psychiatric patient may be unable or unmotivated to voice physical complaints.

Thus, while it may not seem like a CAM treatment, the searching medical exam is an often-overlooked but fruitful option that can result in dramatically increased patient wellness and reduction or elimination of the need for medication.

Failure to identify one or more medical conditions that are causing or exacerbating mental symptoms may result in:

- A continuation or worsening of psychiatric symptoms.
- Prolongation or worsening of physical illness.
- Failure to respond to treatment.
- Unnecessary use of psychiatric medication, possibly for life.
- A patient falsely believing he/she has a purely psychiatric condition.
- Early death.

Signs That Mental Symptoms Have a Medical Cause

Numerous signals exist that indicate medically-caused psychiatric symptoms (Koran 1991):

1. The mental disorder is a first episode.
2. The mental symptoms occur in a patient who is:
 - a. Aged 40 or more.
 - b. Currently ill with a major medical illness.
 - c. Taking prescribed or over-the-counter medications that can cause mental symptoms.
 - d. Experiencing neurological symptoms such as unilateral weakness, numbness, paresthesias, clumsiness, gait problems, headaches of increasing severity, vertigo, visual symptoms, speech or memory difficulties, loss of consciousness, or emotional lability.
 - e. Experiencing weight loss (10% or more of baseline weight), unusual diet (e.g., complete vegetarianism) or self-neglect that could cause vitamin-B deficiencies.
 - f. Not experiencing serious life stress.

3. The patient has a **past history** of:
 - a. A physical illness that can impair organ function (neurologic, endocrine, renal, hepatic, cardiac, or pulmonary).
 - b. Recent falls or head trauma with unconsciousness.
 - c. Alcohol or drug abuse.
 - d. Taking several over-the-counter drugs.
4. The patient has a **family history** of:
 - a. Inheritable metabolic disease (diabetes, porphyria).
 - b. Degenerative or inheritable brain disease.
5. Certain **mental signs** are present:
 - a. Altered level of consciousness.
 - b. Fluctuating mental status.
 - c. Any cognitive impairment.
 - d. Visual, tactile or olfactory hallucinations.
 - e. Episodic, recurrent, or cyclical symptoms interspersed with periods of being well.
6. Certain **physical signs** are present:
 - a. Signs of major organ impairment, e.g., ascites, edema.
 - b. Any focal neurological deficit.
 - c. Diffuse subcortical dysfunction, e.g., slowed speech, mentation or movement, dysarthria, ataxia, incoordination, tremor, chorea, asterixis.
 - d. Cortical dysfunction, e.g., dysphasia, apraxia, agnosia, visiospatial deficits, defective cortical sensation.
7. Response to appropriate psychiatric treatment is poor. (Rethink the diagnosis, re-examine the patient, and consider seeking the advice of a consultant.)

Additionally, the following are reported characteristics of patients with physically-caused psychiatric symptoms (Hall 1980):

- A history of anxiety or unusual behavior present since childhood or adolescence.
- The patient evidences a multiplicity of symptoms that involve several organ systems.

- The patient evidences unusual symptoms that are difficult for the physician to deal with.
- A history of atypical response or failure to respond to treatment.
- A history of doctor shopping.
- A failure to carry out the physician's recommendations.
- The absence of concern (in the patient) in the face of serious complaints.
- Symptom onset concomitant with, or exacerbated by, particular people or stressful life events.
- Apparent secondary gain (i.e., disease allows him/her to miss work, gain sympathy, etc.) resulting from physical symptomatology.

The following symptoms indicate that medical illness is more likely (Diamond 2007):

- A change in headache pattern.
- Visual disturbances (e.g., double vision or partial visual loss).
- Speech deficits, either dysarthrias (problems with the mechanical production of speech sounds) or aphasia (difficulty with word comprehension or word usage).
- Abnormal autonomic signs, such as blood pressure, pulse, temperature.
- Disorientation or memory impairment.
- Fluctuating or impaired level of consciousness.
- Abnormal body movements.
- Frequent urination, increased thirst (possibly symptoms of diabetes).
- Significant weight change, gain or loss.

Conditions That Cause Psychiatric Symptoms

Medical conditions can cause symptoms that mimic any psychiatric diagnosis. The most common psychiatric complaints—psychosis, anxiety, and depression—are known to

be created by a host of physical ailments. (For a full list of these conditions, see the Appendix, page 102.)

Psychosis, characterized by hallucinations, delusions, and/or a general loss of contact with reality, can be generated by many conditions that impact cerebral function. Brain injuries or growths, neurological infections, drug reactions, and severe endocrine disorders are just some of the medical issues that may be indicated.

Anxiety is a state of nervousness, fearfulness, tension, and/or worry. These disturbances can be brought on by conditions such as cardiopulmonary problems, toxic conditions, hypoglycemia, and a broad range of legal and illegal drugs.

Depression can include an array of symptoms such as sadness, low self-esteem, lethargy, and apathy. Yet the person may actually be impacted by any of an extensive list of ailments, including hormonal problems, viruses, cancer, heart issues, and side effects of medications.

Commonly Overlooked Medical Maladies

A number of common medical issues associated with psychiatric sequelae are frequently overlooked. These include head injuries, thyroid issues, sleep disorders, and low cholesterol levels.

Head Injuries

Failure to inquire about a history of head injury or events that could involve head injury (such as sports and auto accidents) could result in an undiagnosed risk factor for psychiatric symptoms. In reviewing 164 patients a year after a traumatic brain injury (TBI), Deb et al found they were 7 times more likely to have depression than the general population. They were 11 times more likely to have panic disorder (Deb 1999).

Typical neuropsychiatric symptoms following TBI include posttraumatic amnesia, cognitive disorders and dementia, posttraumatic epilepsy, aphasia, depression, mania, psychosis, anxiety disorders, personality changes, aggression, behavioral

dyscontrol, fatigue/apathy, and increased risk of suicide (Reeves 2011).

Even up to five years after non-impact brain injury (whiplash), patients have been frequently found (greater than norms) to have cognitive deficits—primarily in the area of executive functioning—and problems with behavioral control, sleep, and sexuality (Henry 2000).

In addition to mainstream medical procedures, CAM treatments for mild to severe TBI include acupuncture, chiropractic, neural therapy, and EEG biofeedback. Hyperbaric oxygen (HBO) treatment has been found to be effective for post-TBI mental symptoms. A Chinese research team reported: “After two courses of HBO treatment, 252 previously positive [TBI] patients were examined again by SPECT. The results revealed that 92 patients still had abnormal scans but 160 were now normal.... The results of our study showed the distinctive beneficial effect of HBO in neuropsychiatric disorders after TBI and that SPECT images were far superior to CT scan in evaluating the effect of HBO and neuropsychiatric disorders after TBI.” (Shi 2006)

Thyroid Issues

The thyroid gland regulates, among other things, metabolism and the rate of energy usage in the body. Psychiatric symptoms of hyperthyroidism include:

- Generalized anxiety
- Depression
- Irritability
- Hypomania
- Cognitive dysfunction
- Mania (in severe hyperthyroidism—thyrotoxicosis, “thyroid storm”)

Mental symptoms of hypothyroidism include:

- Depression
- Cognitive dysfunction
- Psychosis (in severe hypothyroidism—“myxedema madness”)

Subclinical hypothyroidism is a condition in which TSH (thyroid stimulating hormone) is elevated, but T4 is low or normal and the patient has few or no symptoms. Psychiatric symptoms include:

- Depression
- Rapid cycling in bipolar disorder (a common cause)
- Subtle signs of cognitive dysfunction (Levenson 2006)

Thyroid irregularities are not only common but many people don’t know they have them. Even those being treated for them frequently show lab signs of thyroid hormones that are above or below the norm:

- 9.5% of the public have elevated TSH levels—indicative of hypothyroidism—including some who are being treated for it.
- 2.2% of the public have subnormal TSH levels, including some who are being treated for it.
- 40% of patients taking thyroid medications have abnormal TSH levels.
- Symptoms are reported more often in hypothyroid vs. euthyroid individuals (Canaris 2000).

Amongst bipolar patients in the depressive phase, two-thirds are found to have TSH in the high normal range and a low-normal free thyroid index (FTI). These individuals have been found to recover significantly more slowly than those with optimum thyroid profiles—an average of one year versus eight months (Cole 2002).

Given that nearly 10% of the population has hypothyroidism and that this condition, due to its mental and behavioral

manifestations, is overrepresented amongst psychiatric patients, the diagnosis of subclinical or clinical hypothyroidism must be considered in every patient with depression. This is particularly critical in settings, such as outpatient clinics and non-MD therapist offices where medical exams and lab testing are less likely to occur.

Hyperthyroidism, though less common, should also be suspected when a patient presents with chronic anxiety, irritability, and other symptoms of this condition.

Sleep Disorders

One of the critical elements of good mental and physical health is sufficient, quality sleep, as is discussed in detail in Chapter Three. Common hidden parasites on sound sleep are obstructive sleep apnea (OSA), restless leg syndrome, and other sleep disorders.

OSA is characterized by heavy snoring and a continuous disruption of breathing during slumber resulting in poor sleep quality. Psychiatric symptoms include:

- Poor memory and concentration
- Changes in personality
- Depression (Schwartz 2007)

The American College of Physicians claims OSA:

- Occurs in about 4–9% of middle-aged men.
- Occurs in about 2–4% of middle-aged women.
- Goes undiagnosed in about 80–90% of those who have it.

Given that obesity is one of the most common contributors to OSA, and that obesity is a common side effect of psychiatric medication, OSA is not only likely overrepresented in psychiatric populations, but may exacerbate existing psychiatric conditions, thus retarding or preventing recovery for some.

OSA is simple to diagnose through a sleep study and is considered highly treatable through lifestyle changes, weight loss, avoidance of evening alcohol, and/or use of a CPAP

(Continuous Positive Airway Pressure) device (American College 2011). CPAP therapy is associated with sustained long-term relief from the symptoms of depression for patients with OSA (Schwartz 2007).

Low Cholesterol

Low serum cholesterol—defined as 160 mg/dL (4.5 mmol/liter) or lower—appears with regularity on blood test results, yet may be overlooked as a contributing factor for anxiety or depression. Amongst other tasks, cholesterol is needed to modulate serotonin transporter activity in cellular membranes (Scanlon 2001).

Low cholesterol, which can occur naturally regardless of diet or lifestyle, has been linked to violent death (e.g., suicide and accidents). Men with chronically low cholesterol levels show consistently higher risk of having depressive symptoms (Steegmans 2000). In healthy young adult women, low cholesterol is inversely associated with trait measures of depression and anxiety (Suarez 1999).

Common CAM treatments for low cholesterol include increasing dietary intake and cholesterol supplements such as those found at <http://soniccholesterol.com>.

The Koran Algorithm

The problem of overlooked medical ailments in psychiatric populations is so significant that in 1988 the California legislature debated and passed Assembly Bill 1877, which mandated an exploration into a means of reducing the risk of missed medical conditions. Lorrin Koran, MD, of Stanford University was tasked with leading the development of a corrective procedure. The results of his team's work were reported to the California Department of Mental Health and local mental health programs in 1991 as the Medical Evaluation Field Manual (available at <http://goo.gl/kXIuS>).

In laying the groundwork for the report, Koran reviewed a study of medical exams performed in county mental health programs, which has been carried out by order of the state legislature (Senate Bill [SB] 929). They found:

- Nearly two out of five patients (39%) had an active, important physical disease.
- The mental health system had failed to detect these diseases in nearly half (47.5%) of the affected patients.
- Of all the patients examined, one in six had a physical disease that was related to his or her mental disorder, either causing or exacerbating that disorder.
- The mental health system had failed to detect one in six physical diseases that were causing a patient’s mental disorder.

As a cost-effective measure to reduce these diagnostic errors, Koran and his associates developed an algorithm—a step-by-step procedure—to efficiently narrow down the likelihood of medical disease in psychiatric patients. While the algorithm does not replace a full, searching medical exam, it may be an appropriate choice where funds, time, or patient access are limited. It may also be an appealing alternative for current mental health programs that offer no exam at all.

The algorithm is presented in Figure 2-1 exactly as originally presented in the 1991 report. Some of these procedures may not reflect developments in lab testing since the Field Manual was written, but the fundamentals remain the same and adaptations to current practices are simple enough.

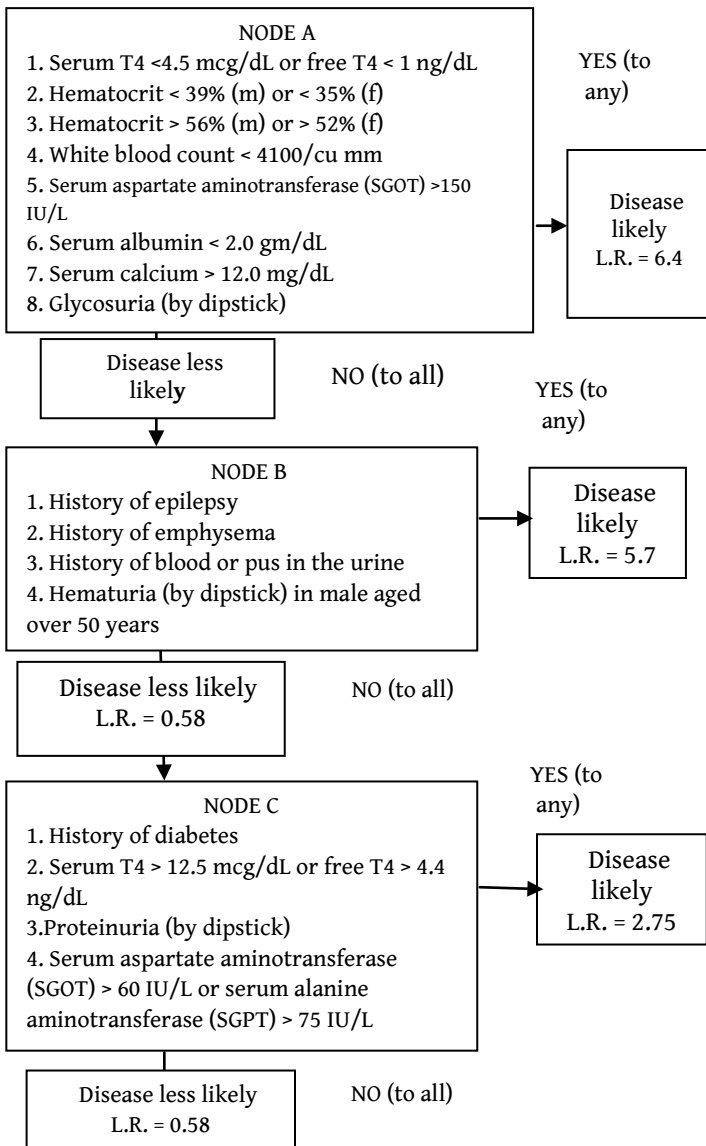


Figure 2.1—The Koran Algorithm. L.R. = Likelihood Ratio. (Courtesy of Christine Marr.)

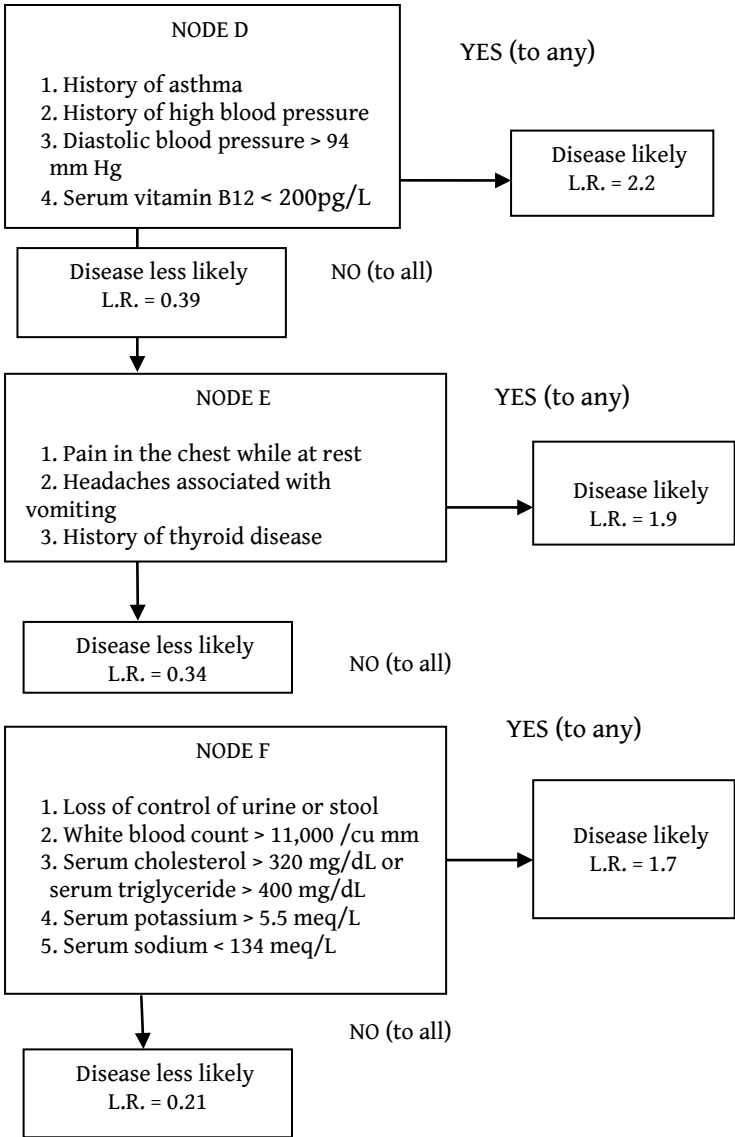


Figure 2.1—The Koran Algorithm (cont.).

Initial algorithm steps:

1. Ask the patient to complete a 10-item Medical History Checklist, assisting the patient as needed:
 - a. Have you ever had:
 - i. Fits, convulsions or epilepsy?
 - ii. Emphysema?
 - iii. Diabetes?
 - iv. Asthma?
 - v. High blood pressure?
 - vi. Thyroid disease?
 - b. Have any of the following symptoms been very noticeable or worrisome to you in the past two months?
 - i. Have you noticed blood or pus in your urine?
 - ii. Have you noticed pain in your chest when resting?
 - iii. Have you had headaches associated with vomiting?
 - iv. Have you had loss of control of urine or bowels?
2. Obtain a sitting blood pressure measurement.
3. Have patient provide a urine sample.
4. Draw the blood specimens for the laboratory battery.
5. Get a lab panel of:
 - a. A hematocrit
 - b. White blood cell count
 - c. Serum aspartate aminotransferase
 - d. Serum alanine aminotransferase
 - e. Serum albumin
 - f. Serum calcium
 - g. Serum sodium and potassium
 - h. Serum cholesterol and triglycerides
 - i. Serum T4 and free T4
 - j. Serum vitamin B12
6. Patient's urine should be examined by dipstick for:
 - a. Glucose
 - b. Blood
 - c. Protein

The results are evaluated against the steps of the algorithm in Figure 2-1. Per the Field Manual, “Abnormal findings listed in the earlier steps of the algorithm more strongly predict the presence of physical disease than those occurring in later steps and hence more urgently require a physician’s attention. A patient who has any positive finding from any step in the algorithm should be referred for further evaluation to a physician who specializes in internal medicine or family medicine.”

Summary

Given the fact that a known percentage of psychiatrists’ clients come to them because of undiscovered and/or untreated medical problems, it is an irony that, of all medical specialists, the psychiatrist is among those commonly called upon the least to exercise clinical medical diagnostic skills. The challenge of mastering differential diagnosis in psychiatry requires, in truth, a Holmesian eye for signs and symptoms and an equal intellect for hazarding the maze of possible risk factors.

Absent this cautious approach, much suffering can occur. Seen from the eyes of a patient or his or her family, the slow or sudden decline into psychosis, deep depression, unrelenting obsessive thought or other severe psychiatric symptoms can be a nightmare. While a patient or physician may be anxious to assign a psychiatric diagnosis to the syndrome presented, a failure to look for and detect a possibly underlying medical cause or contributing factor could unnecessarily prevent the alleviation of, extend, or deepen this world of doom the patient endures.

Properly examined, diagnosed, and treated, the client with a hidden medical illness may have the good fortune of being rescued from the dustbin of “nonresponsive to treatment” and find hope and relief under the watchful eye of his physician.

3. Lifestyle Changes That Improve Mental Health

Christine Berger

In recent years there has been an increase in people seeking multiple methods of treatment for mental illness and, subsequently, an increase in research on the role of lifestyle choices and their impact on mental health. The message from both clinical practice and a large and growing body of research has been that, while it requires more responsibility to make healthy choices, the positive outcomes for physical and mental health are worthwhile. In this chapter we examine the roles that diet, exercise, sleep, time in nature, and social support play in improving mental health. First, we examine one of the key factors in the success of lifestyle choices: self-efficacy and motivation.

Reframing Lifestyle Choices as Empowering Decisions

While certain components or factors of mental illness are beyond our control, recent research has demonstrated that many choices we can make on a daily basis improve our mental health or at least minimize symptoms. However, numerous factors tend to predict whether individuals will take full

responsibility for their lifestyle and specifically mental health. One important factor is self-efficacy, a concept introduced by psychologist Albert Bandura (Bandura 1977) that indicates one's level of ability to accomplish a specific task. Two research reports examined numerous studies looking at self-efficacy as a predictor of health behavior and found not only strong correlations between self-efficacy and promotive health behaviors but also that self-efficacy could be enhanced with proper guidance (O'Leary 1985) (Strecher 1986). One study that investigated the relationship between depression, obesity, and self-efficacy found gender differences. Self-efficacy has been shown to have a negative relationship with depression (Gecas 1989) especially in the fact that self-efficacy seems to mediate between some forms of stress and depression.

Motivational Interviewing

Regarding lifestyle choice, self-efficacy speaks to a person's given response to a situation. The other component that plays a key role in this is motivation. Clients may state that they desire to make the change but then they may fail to do so. One way to address this issue is to assess the client's readiness to change. A scale is available (Prochaska 1986) to determine if the individual is completely ready to make the changes or if he is only in the initial and more ambivalent stages ranging from pre-contemplation to action. Once motivation is assessed the provider could implement motivational interviewing (Miller 2002). This is a fairly easily taught psychotherapeutic technique where a series of questions and interactions lead a client to greater awareness about her level of motivation for change and assist in increasing that motivation. A provider would likely refer the client to a professional trained in motivational interviewing or to a psychotherapist either for motivational interviewing or longer-term psychotherapy to address the self-defeating thoughts and beliefs.

Food as Medicine

Certain foods and categories of foods impact mental wellness and this impact is becoming increasingly better understood and its correction more urgent. Recent research is demonstrating that the modern Western diet is sorely lacking in essential vitamins, minerals and other healthful properties. With the rise of fast and easy to prepare foods, the natural, healthful components included in fresh fruits and vegetables are not ingested, leading to an imbalance in multiple body systems such as the digestive system and the nervous system. The best course of action is to increase intake of fruits, vegetables, whole grains and lean, organic meats free of added hormones. However, due to issues of income level and access, this is a challenge, and the use of supplements may help where this is not fully possible (Weil, 2006).

Two topics of interest include foods that increase inflammation and foods that are toxic to the mind-body system (Hyman 2007). Physician Mark Hyman has written extensively about the ill effects of ingesting toxins and other substances that lead to inflammation. He found through his clinical experience and a review of the research that over time, these problems seem to contribute to depression, anxiety and mood swings. Shifting one's diet from processed and chemicalized foods to a diet full of fruits, vegetables, whole grains and clean lean proteins seems to have a dramatic impact on physical and mental health. Integrative health physician Andrew Weil has written extensively on foods that contain nutrients required by the body for optimum health, and his experience emphasizes the need to take in omega-3 fatty acids, whole grains, fish, and fresh vegetables and fruits (Weil 2006).

Other research has shown that folate and vitamin B12 have a positive impact on mental health (Alpert 2000), as well as omega-3 fatty acids (Settle 2001). One study surveyed 4644 New Zealand adults about their fish consumption (omega-3) and mental

health, and a significant association was found between higher fish consumption and better mental health (Silvers 2002).

Many healthy, simple meals can be prepared that help buffer against mental illness or as a supplementary treatment. They take some basic cooking skills and the desire to prepare healthy food. Andrew Weil's *Eating Well for Optimum Health* (2000) or Mark Hyman's *The UltraMind Solution* (2010) and *The UltraSimple Diet* (2009) are good resources for further education about these foods and both include some simple recipes.

Exercise: Free Mental Health Care

In the past twenty years, the critical role that physical exercise plays in mental wellness has been demonstrated scientifically, but this has failed to make the clinical connection in the mainstream treatment of mental illness (Callaghan, 2004). The growing body of evidence indicates that it is a powerful way to treat and prevent mental health problems. It is especially critical that exercise be included in the pantheon of treatment modalities because so many forms of exercise are fun, free, and accessible for people of all classes, cultures and income levels (Paluska 2000).

Hassmen et al conducted a large-scale (N=3403) study examining exercise habits and anxiety and depression levels and found that a level of 2-3 times per week regularly was the rate that predicted significantly less anxiety and depression. They also found that moderate exercise over a long period was more effective than intense, acute, intermittent exercise (Hassmen 2000). Paluska and Schwenk looked at the impact of exercise on anxiety and found that people did best exercising in 40-minute sessions for at least 10 weeks (frequency per week not noted) (Paluska 2000). Overall, it seems that a commitment to moderate exercise is sustainable and demonstrates the most meaningful effects.

Exercise reduces anxiety, depression, and negative mood and improves self-esteem and assists cognitive skills (Callaghan

2004). It appears that various types of exercise may help specific disorders: hiking for spiritual connection, martial arts for depression and spirituality, boxing or ultimate fighting to work out anger, and team sports to improve confidence and build social skills (D'Silva 2002). One study found that panic was reduced equally as well by both anti-anxiety medication and exercise from individual self-report, although the medications worked more quickly (Broocks 1998). Higher levels of coherence, mastery, self-efficacy, and better social support were reported by those engaged in physical exercise (Hassman 2000).

Paluska and Schwenk published a detailed review of the state of the research on exercise and mental health and concluded that exercise appears to have the most impact on people with mild to moderate anxiety and depression. The authors found that exercise has the same impact as psychotherapy for people with mild to moderate symptoms in clinically depressed populations but the correlation between exercise and mood is less clear in non-clinical populations (Paluska 2000).

Regarding neurotransmitters, exercise has been shown to increase serotonin (Fox 1999), acetylcholine and norepinephrine (Deslandes 2009). Recent data revealed that exercise may function more as an analgesic, sedative, and anxiolytic than as a producer of endorphin highs (Deslandes 2009).

An interesting finding in the literature reveals that all types of exercise seem to have a positive effect on depression and other mental illness: aerobic, anaerobic and flexibility (Paluska 2000). Atlantis et al found that multimodal exercise (as opposed to one form of exercise) resulted in significantly less depression and stress and better levels of mental health and vitality after 24 weeks (Atlantis 2004).

Given the evidence that exercise makes a profound impact on mental health, it is wise to assess exercise habits with clients. Along with assessing motivation for fitness, it would be helpful to present the evidence that exercise has a direct effect on mental illness and to engage a discussion on the “fun factor.” Exercise encompasses so many activities that it is entirely

possible for individuals to find at least one exercise— aerobic, anaerobic or flex-training—where they can truly enjoy themselves and be empowered to treat their mental illness.

Sleep: Nature’s Mood Management System

Another factor in lifestyle effects on mental health is sleep. Along with the negative consequences of fast food, loss of sleep causes more problems than simply lack of concentration, energy, and creativity (Kemper 2010). Typically in the field of mental health sleep was considered a symptom and not a causal agent in mental disorders, but recent studies have found that sleep issues seem to contribute to anxiety, depression, ADHD and bipolar disorder (Harvard 2009). Essential sleep restores all of the major mind-body systems, including the ability to relax, release stress, and regulate emotions. Lack of sleep plays a role in the growing obesity rates, which are also linked to growing rates of depression. Exercise increases sleep time, which leads to improved overall mental health (Landers 1997).

Connecting back to the introduction, achieving proper sleep begins with a decision to do so and to adjust one’s schedule and lifestyle in a way that prioritizes the mental health care role of sleep. Although many elements of sleep continue to elude scientific understanding, we do know that limiting alcohol and nicotine before bed improves sleep. Aerobic exercise during the day and meditation before sleep can improve sleep, and thus mood (Harvard 2009) (Kemper 2010).

Being in Nature

As technology has progressed, people have become more sedentary, spending more hours indoors. This has taken a toll on mental health. Recent research has investigated the impact of greenery and green outdoor spaces on various mental disorders and negative states. For example, Sugiyama et al examined the relationship between perceived neighborhood “greenness” and mental health and found a stronger correlation between

greenness and mental health as compared to physical health, while controlling for recreation and social coherence (Sugiyama 2008). Van den Berg et al conducted a study on the relationship of green space to mental health and stress specifically. They found that people who had a large amount of green space within 3 km of their house (not simply a backyard or a neighborhood park) were less negatively impacted by stress than people with less greenery. This followed for mental health in general (Van den Berg 2010). Children with ADHD demonstrate improved symptoms after spending time in nature (Faber 2011). This is a critical issue because ADHD has increased in prevalence and some components of it may correlate with an increase in indoor, sedentary activity and less time outside.

These studies offer data that reveal the power of greenery and nature on the mind-body-spirit system. With the exception of impoverished urban areas, most individuals have access to some sort of green space. Consciously engaging with it, whether it is a park, mountain, or meadow, is a simple way to release stress and anxiety and connect with something larger. Clinically, it seems that engaging with green space connects us to something larger than ourselves and our perceived problems.

Social Connections

Abundant evidence indicates that social support promotes health on all levels, but especially mental health (Kemper 2010). Most data indicate that there are two models that explain how social support impacts mental health: the general/main-effect model and the buffering model. The general model describes the degree to which individuals are generally socially connected, engaged and interactive at any given point in time. The buffering model is more specific in that individuals are in specific distress and know they have people who will support them emotionally (Kawachi 2001).

Lifestyle choices are simple, accessible and typically affordable. With some education and access to resources, nearly anyone can

utilize them as adjunctive or primary treatments for varying degrees of mental health challenges. The key to success is developing a strong belief in self-mastery, in achieving goals and in coming to know what good health feels like.

4. Nutritional Treatments in Psychiatry

Garry Vickar, Dan Stradford

The use of nutritional supplements in psychiatry has had a controversial history. It is the experience of most psychiatrists that powerful medications are commonly needed to curb psychotic behavior, manic episodes, suicidality, and other dramatic manifestations they are asked to treat. It hardly seems reasonable that a vitamin or mineral would have much beneficial effect. The usual response of most physicians, when asked about nutritional supplements, is that they likely won't help but they probably won't hurt.

But as studies now show, there is a place for nutritional treatments in mental health treatment. Some patients, due to poor diets or metabolic abnormalities, have unusually high needs for some nutrients—biochemicals that are required for normal physiological function. Supplementation can sometimes fully or partially restore neurological activity that has gone awry. Additionally, some supplements—as lithium has for decades—have a palliative effect on symptoms and, in moderate doses, can improve the patient's condition with few or no side effects.

A Brief History

What we now call nutritional or “orthomolecular” psychiatry began in a university laboratory in the early 1950s in Saskatoon, Saskatchewan, Canada. At that time Abram Hoffer, M.D., Ph.D., and his colleague Humphry Osmond, M.D., (who coined the term “psychedelic”) along with another physician, John Smythies, M.D., hypothesized that the origins of schizophrenia could be related to an abnormality of adrenaline metabolism, creating hallucinogenic metabolites which could be alleviated with niacin (vitamin B3). Hoffer, with his background in animal husbandry and biochemistry, undertook what is believed to be the first double blind studies in psychiatry. (In the interest of full disclosure, one of the writers—Vickar—is Dr. Hoffer’s nephew.)

Numerous studies were published in the 1950s as the work unfolded (Agnew 1955, Hoffer 1957). Publishing the results of a nine-year study in the *Lancet*, Hoffer continued to find that those patients blinded to placebo versus niacin or niacinamide showed significant improvement only to the vitamin and definitely separation from placebo (Hoffer 1962). The results were exciting to them during a time when the only treatments were barbiturates, ECT, insulin shock therapy, and restraints. However, at the same time chlorpromazine had been introduced by Heinz Leiman in Montreal and the results were so dramatic that the idea that a vitamin could do something paled in comparison and did not gain traction.

In the 1960s, two-time Nobel laureate Linus Pauling, who had been doing his own research on Vitamin C and the common cold, was attracted to Hoffer’s work and joined Hoffer and like-minded scientists in advancing the cause. In listing the available psychiatric treatments of the period, Pauling remarked, “I have reached the conclusion that another general method of treatment, which may be called orthomolecular therapy, may be found to be of great value, and may turn out to be the best method of treatment for many patients.” Pauling defined

“orthomolecular” as “optimum molecular environment.”
(Pauling 1968)

As medical science has progressed, nutrients have been subjected to continued rigorous study as psychiatric treatments. Biochemical pathways of neurotransmitters and other neurochemicals have been mapped, showing the roles of vitamins, minerals, enzymes, amino acids, and other contributors to healthy neurochemistry.

Niacin has now been found to possibly be helpful with Alzheimer’s disease (AD). A study on Alzheimer’s Disease Transgenic Mice concluded: “...these results suggest that nicotinamide [a form of B3] may also be effective against other tauopathies, which share many common pathological features with the tau pathology seen both in AD and in the 3xTg-AD mice. In summary, the results presented here suggest that nicotinamide has potential as a novel, safe, and inexpensive AD therapy, either alone or in combination with AB [amyloid-beta]-lowering therapies.” (Green 2008)

Also, a study of the nutritional habits of 4000 people aged 65 and older, who had no Alzheimer’s disease at the start of the project, found: “Dietary niacin may protect against AD and age related cognitive decline.” (Morris 2004)

The Methylation Cycle

While nutritional supplementation may seem, at first glance, unlikely to impact mental function as significantly as pharmaceuticals, the picture becomes clearer when we take a look at some of the biochemical pathways that affect psychiatric symptoms. Here we see that nutrients are the building blocks of normal cerebral activity and, without them, necessary neural processes cannot occur.

One example of such biochemical activity is the methylation cycle (Figure 4.1). Methylation refers to the transfer of methyl groups (CH_3 —a carbon atom bonded to three hydrogen atoms) to and from organic molecules, a process that occurs billions of

times in the body each day. This process impacts a broad range of physiological and psychiatric issues. Methylation deactivates noradrenalin, for example, a neurotransmitter associated with cortisol and the stress response. Methylation acts on dopamine, norepinephrine and serotonin to impact, among other things, mood, memory, concentration and sleep.

For the methylation cycle to work properly, the correct substrates, or materials, must be available. Nutrients involved in this activity include folic acid (noted by its derivative tetrahydrofolate, or THF, in Figure 4.1), B6, B12, and SAM-e (shown as SAM in Figure 4.1). As expected, supplementation with each of these nutrients has been found to have some psychiatric benefit and deficiencies have been seen to affect brain performance.

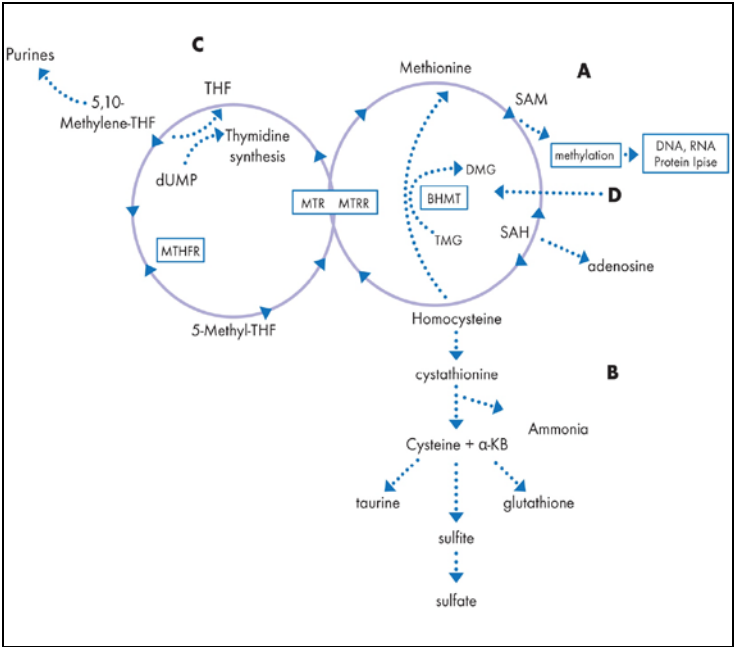


Figure 4.1—A simplified schematic of the methylation cycle.

A lack of B vitamins has been found to cause cognitive dysfunction and reductions in brain capillary length and density in mice. Test animals fed a B-deficient diet were found to have seven times the homocysteine levels of controls (Troen 2008).

Folate: Vitamin B9

A clear relationship has been established between B12 and folate deficiencies and depressive disorders in the elderly (Tiemeier 2002). Researchers report that low folate and B12 status has been found in depressed patients in general, along with increased homocysteine levels (see Figure 4.1), a common metabolic result of low B vitamins that has a wide range of negative health ramifications. Low plasma or serum folate has also been found in patients with recurrent mood disorders treated by lithium. In one review of the evidence of B vitamin influence on mood, the authors concluded, “On the basis of current data, we suggest that oral doses of both folic acid (800 microg daily) and vitamin B12 (1 mg daily) should be tried to improve treatment outcome in depression.” (Coppen 2005)

Serum folate levels have also been found to be low in schizophrenia patients and supplementation significantly improves negative symptoms in a specific genotype: MTHFR status (see Figure 4.1—MTHFR is in sequence C) significantly moderated the relationship between change in serum folate and change in negative symptoms (Hill 2011).

MTHFR refers to the enzyme methylenetetrahydrofolate reductase and the gene that regulates it. The MTHFR gene has been found to have a large number of mutations. One particular form—C677T—is found in significantly higher numbers in psychiatric populations. MTHFR-C677T reduces MTHFR enzyme activity to 30–65%, thus affecting the processing of folate and other nutrients. A meta-analysis of research on the MTHFR gene and psychiatric sequelae found “an association between the MTHFR C677T variant and depression, schizophrenia, and

bipolar disorder, raising the possibility of the use of folate in treatment and prevention.” (Gilbody 2007)

Vitamin B12

Cobalamin, commonly known as vitamin B12, is another link in the methylation cycle. Psychiatric signs of deficiency include concentration difficulties, confusion, irritation, impaired memory, dementia, irritability, depression, personality changes, and psychosis.

Psychiatric symptoms may exist despite the absence of typical blood or neurologic symptoms common with B12 deficiency. Psychosis may respond to supplementation, even after a prolonged period of cobalamin deficiency. B12-related mental disorders can manifest even with low-to-moderate B12 serum levels. If homocysteine or methylmalonic acid levels are elevated, despite “normal” B12 levels, a deficiency could be indicated. This is a particular issue with the elderly, who commonly experience B12 deficiency, in part due to a scarcity of intrinsic factor, a glycoprotein that aids in B12 absorption (Sabeen 2009). For these patients, injected B12 may prove more effective than supplements taken orally. It should be noted that some non-elderly also do not produce sufficient intrinsic factor and are at risk for psychiatric symptoms due to B12 deficiency, as are vegans and vegetarians.

Recent research suggests that B12 supplementation may reduce the risk of Alzheimer’s disease. In Finland 271 people, age 65 to 79, were selected who did not have dementia at the start of the study. Over a seven-year span, 17 people developed AD. Researchers found that, as homocysteine levels rose (a factor of B12 deficiency), the likelihood of AD increased. The same was true as B12 levels dropped (Hooshmand 2010).

B12 has been found as a marker of how well people will respond to treatment for depression. In another Finnish study, researchers monitored 115 patients suffering from depression over a six-month period and grouped them according to how

well they responded to treatment. The patients who responded fully to treatment had higher concentrations of vitamin B12 in their blood at both the start and the end of the study than those for whom treatment was less effective. Results confirmed the conclusions of a similar study on elderly patients (Hintikka 2003). These observations suggest that B12 can be a helpful complement to any treatment regimen for depression.

Vitamin B6

Vitamin B6, or pyridoxine, is another critical element of the methylation cycle. One of its many tasks is to convert tryptophan to serotonin and to assist in the making of norepinephrine and melatonin. A lack of B6 or a metabolic failure to process it correctly can cause nervousness, irritability, depression, difficulty concentrating, and short-term memory loss.

B6 has been found in a multitude of studies to be twice as effective as placebo in improving symptoms of premenstrual syndrome when taken in doses of 50-100 mg per day. Higher doses were not found to increase effectiveness (Wyatt 1999).

Pyridoxine may also be helpful in autism and related disorders, many studies suggest. It's been found that when 100 mg of B6 is administered daily for two weeks, then twice a day after that, children with pervasive developmental disorder see an 11.2-point increase in verbal IQ in 4 weeks (Kuriyama 2002).

SAM-e

SAM-e (S-adenosyl methionine), though not among the B vitamins, is also a critical part of the methylation cycle. As a result, supplementation with this nutrient has been found helpful for depression when taken alone or as an adjunct to medication. A more recent study found that on a dose of 800 mg twice daily, twice as many participants taking SAM-e along with medication improved compared to controls. Additionally, 26% of

the SAM-e group experience complete remission, compared to 12% of controls (Papakostas 2010).

An Italian study comparing the effects of imipramine versus SAM-e found they proved equally effective against depression in a four-week trial, with SAM-e, at a dose of 400 mg/day intramuscularly, causing significantly fewer side effects (Pancheri 2002).

Of course, all of these studies supplemented elements of the methylation cycle—B12, B6, SAM-e, etc.—in isolation, providing an increased dose of a single nutrient. Many CAM practitioners, working with the structure of the methylation cycle, often supplement with multiple elements simultaneously—such as B6, methionine, calcium, magnesium, SAM-e, inositol (a B vitamin), vitamin C, and others—to provide more substrate materials for the cells, thus hopefully enriching the functionability of the methylation pathway and obtaining a more therapeutic response.

Not all patients, however, are deficient in methylation, so one has to be alert to a negative response to methylation supplementation and discontinue supplementation if necessary.

Fatty Acids

In the past decade we have seen a plethora of studies showing the effectiveness of fatty acids in the treatment of a range of mental disorders. Like the elements of the methylation cycle, fatty acids have their own chemical pathway, which also requires specific substrate materials which must be in adequate supply for normal physiological response to occur.

Of particular interest to mental health professionals has been the omega-3 fatty acids—so-called because the molecule has 3 hydrogen atoms at the end of a carbon chain. Note that this makes CH_3 , a methyl group. Omega-3 fatty acids include alpha linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). These are found in fish oil, flax seed oil and other sources.

As examples of how fatty acids impact mental health, EPA is converted to leukotrienes and prostaglandins, both of which help reduce inflammation. Inflammation has been repeatedly associated with depression. Also DHA is critical for adequate functioning of embedded proteins in postsynaptic receptors for neurotransmission.

Omega 3s and Psychotic Disorders

One of the landmark studies of essential fatty acids (EFAs) in psychiatry—a Harvard-based clinical trial that sparked many follow-up studies for numerous mental disorders—was a double-blind study of patients with bipolar disorder. Treated with 9.6g/day of omega-3 EFAs (current psychiatric studies generally use lower dosages in the 1-4 gram range), after 4 months, the EFA group not only had a significantly longer period of remission, but for nearly every other outcome measure, they performed better than the placebo group (Stoll 1999).

Omega-3 EFAs have shown promise as a treatment for schizophrenia. One reason for this is that the neuronal membranes of the brain are rich in EFAs which impact neural receptor function. A review of the literature finds ample evidence of therapeutic response from EFAs. An epidemiological study found improved outcomes for schizophrenia patients in countries where diets are high in unsaturated fatty acids. Trials of EPA versus placebo have found significant benefit on positive and negative symptoms. One study found EPA as a monotherapy to have some antipsychotic qualities (Emsley 2003).

A review of 18,411 women in Sweden found that those who ate fish 3–4 times per week were 53% as likely to experience high-level psychotic symptoms as women who ate no fish at all. The risk was also lower for women with a high intake of omega-3 and omega-6 fatty acids compared to women with a lower intake (Hedelin 2010).

While omega-3 EFAs appear to improve symptomology in psychotic disorders, their greater value may lie in their

prophylactic effect against psychosis. Researchers in Austria treated young patients, aged 13 to 25, who were at ultra-high risk for psychotic disorder, in a twelve-week, double-blind study. This was followed by a 40-week monitoring period. The EFA group received 1.2 grams a day of omega-3 fatty acids. At the end of the study, among the EFA group only 2 of 41 individuals had transitioned to psychotic disorder compared to 11 of 40 in the placebo group (Amminger 2010).

Fatty Acids and Depression

As good as the news has been with EFA treatment of psychotic disorders, a stream of studies has consistently shown the effectiveness of omega-3s in the treatment of depression, so much so that it has become a mainstay therapy in many private practices and hospitals.

As an example of the effectiveness of EFAs in a broad range of depressive clients, researchers in Israel reviewed three clinical trials carried out on a variety of patient populations at Beer Sheva Mental Health Center. The first tested EPA versus placebo on 20 unipolar clients with major depression as an adjunct to antidepressant therapy. The second study treated 28 children, ages 6–12, with a monotherapy of EPA or placebo. The third study treated 12 bipolar patients with an open-label, add-on trial of 1.5 to 2 grams per day of EPA for up to 6 months.

Results were very good across the board. The unipolar group showed “highly significant benefits” by week three. The child study showed, again, “highly significant effects of omega-3” on each of the three rating scales. Of the participants in the bipolar study, 8 of 10 who completed at least one month of follow-up achieved a 50% or greater reduction in Hamilton depression scores within one month. No significant side effects were reported in any of the studies (Osher 2009).

Vitamin D

The role of Vitamin D in mental health is just beginning to unfold. Generated primarily by the body through sun and light exposure, this nutrient, among other things, plays a role in stress mediation through the regulation of dopamine and cortisol. Although clinical studies are few, epidemiological studies show remarkable associations between low Vitamin D and psychiatric disorders, including depression and bipolar disorder. A review of 250 publications found that patients with either schizophrenia or bipolar disorder are more frequently born in winter or spring. These same periods have the largest maternal decline in plasma concentrations of vitamin D (Ashkanian 2010).

A previously-cited study of 18,411 women found that those in the highest quartile of Vitamin D consumption had a 37% lower risk of psychotic-like behavior than women in the lowest quartile (Hedelin 2010).

Consistent with a number of studies, an examination of the Vitamin D levels of 2070 participants over the age of 65 in England found that low D serum levels were clearly associated with depressive symptoms (Stewart 2010).

Given Vitamin D's broad impact on health in general and poor diet and lack of sun exposure commonly found in psychiatric patients, testing for serum D levels and correcting them is an inexpensive but effective way of protecting and improving a patient's mental and physical health.

Minerals

Like vitamins, minerals of all kinds are needed for normal physical and cerebral function. A lack of one or more minerals or a metabolic failure to correctly process minerals can create deficiency states that negatively impact mental activity, emotion, and/or behavior.

Zinc

Zinc has been studied as a treatment for a number of psychiatric issues. Zinc deficiencies—commonly recognized by white spots or lines on the fingernails—create symptoms such as behavioral disturbances, depression, and confusion. Amongst other roles, zinc regulates copper levels in the body as evidenced in the treatment of Wilson’s Disease, a liver disorder that causes copper to accumulate to toxic levels. Psychiatric sequelae such as psychosis, anxiety, and depression are common in Wilson’s sufferers, and a typical treatment to avoid symptoms and maintain normal copper levels is zinc supplementation.

For some, depression may respond to zinc treatment. A review of all zinc research for depression—covering six databases—concluded: “Evidence suggests potential benefits of zinc supplementation as a stand-alone intervention or as an adjunct to conventional antidepressant drug therapy for depression.” (Lai 2011)

Zinc has also been shown to increase mental and physical resiliency. Rats placed on zinc supplementation for 4 weeks, then administered a moderately severe traumatic brain injury, were found to have reduced depression-like behaviors and improved cognitive behavior compared to controls. Additionally, they showed no significant difference from non-injured controls at any point in the 10-day trial when required to swim a water maze (Cope 2011).

Since lack of appetite is another symptom of low zinc, the mineral has been seen to be helpful in the treatment of anorexia nervosa. Approximately half of anorexics tested are low in zinc and supplementation has been shown to increase weight gain in these patients (Shay 2000).

Calcium and Magnesium

Calcium and magnesium are biochemical partners in the human body. Deficiencies in these two minerals are actually quite common and often overlooked in medical settings (Olinger 1989).

Digestive disorders, such as Crohn's Disease, that inhibit nutritional absorption, can contribute to a deficiency state in these and other nutrients. Low magnesium can cause depressive symptoms, confusion, anxiety, and hallucinations; calcium deficiency can lead to nervousness, apprehension, and numbness. Often supplemented together in approximately a 2:1 calcium-magnesium ratio, this combination is well-known in the CAM world as a calmant and muscle relaxer.

Magnesium deficiency has been linked to depression and other psychiatric disorders (Barbagallo 2009). A study of older diabetic patients found that the prevalence of low serum magnesium was 3.5 times higher amongst depressed individuals compared to controls (Barragan-Rodríguez 2007). Follow-up research by the same team showed that magnesium treatment of depression in elderly diabetics was as effective as imipramine therapy (Barragan-Rodríguez 2008).

Calcium carbonate supplementation, in the form of 1200 mg of elemental calcium daily, was given to 497 women between the ages of 18 and over a range of three menstrual cycles. The researchers concluded: "Calcium supplementation is a simple and effective treatment in premenstrual syndrome, resulting in a major reduction in overall luteal phase symptoms." (Thys-Jacobs 1998)

Summary

Nutritional psychiatry has come a long way since Hoffer and Osmond's first double-blind studies in the 1950s. Through the extensive research of neurochemistry and related fields over the past decades and ample clinical evidence, the logic behind the therapeutic use of vitamins, minerals, and other nutrients has become clear. Hopefully, it is also evident that, for many patients, psychiatric symptoms are warning signs of nutritional deficiency that impact physical status as well. Failure to address these nutritional deficits may not only result in little or no change in the patient's complaints but, as when any medical

anomaly is ignored, may lead to worse symptoms as time goes on and even physical deterioration and early death.

CAM physicians well versed in nutritional tools often find great intrigue in their work. Each patient is uniquely different. Through lab work and clinical observation, nutrient needs are uncovered and remedied, bringing each to a more normalized state, usually with resulting improvement in patient physical and mental well-being.

We have only scratched the surface in this chapter and have not even touched upon amino acids, probiotics, other vitamins and minerals, and other supplements that have been shown to be helpful in the treatment of psychiatric disorders. A great many resources exist to further the practitioner's knowledge.

5. The Role of Allergies, Poisons, and Toxins in Psychiatry

Dan Stradford

One of the significant achievements of modern psychiatry has been the categorization of symptomatology. We know that people who experience manic phases, for example, often respond to treatment with lithium. By classifying symptoms into common syndromes, each of which has its own recommended treatment, the physician has a better concept of how to address a specific constellation of behaviors and mental phenomena he is presented with.

This same classification system, however, can create a false sense of certainty, which can lead to misdiagnosis. The practitioner can fall into the habit of assessing a patient using Diagnostic and Statistical Manual (DSM) criteria, assigning a diagnosis, and prescribing in accordance with diagnostic protocols. While this is an efficient system, the truth is that five different patients with a diagnosis of depression, for example, can have symptoms due to five completely different etiologies. Thus, five different treatment plans may be in order, not a generic approach based strictly on diagnosis.

Two such etiologies that can deceive a psychiatrist's diagnostic eye are allergies and toxins. While treating symptoms

pharmaceutically may help to some degree, a far more effective approach for improving wellness would be to identify and treat the allergy or toxicosis.

Allergies and Mental Health

An allergy is a hypersensitivity disorder of the immune system. Substances which should be innocuous create a reaction in the individual ranging from bothersome to life-threatening. Allergens activate the antibody Immunoglobulin E (IgE), which, in turn, triggers mast cells and basophils, resulting in an extreme inflammatory response.

Allergies can affect any or multiple systems of the body, including digestive, respiratory, cardiovascular, endocrine, and neurological. Allergic responses differ considerably amongst individuals. The same substance—latex, for example—that can cause one person to break out in hives can cause a different individual to have a panic attack.

An individual can have allergies and not know it. Symptoms may not be as recognizable as those of allergic rhinitis, with sniffing and sneezing. Psychiatric symptoms, in particular, even when they are of strictly physiological origin, may be mistakenly assigned to life situations, stress, or other blameworthy causes.

Although the most common allergy-related psychiatric symptoms that have been studied are depression and anxiety, given the variability of human response to allergies, any psychiatric symptom, including psychosis, has the potential of being allergy-induced.

The key element of allergies is exposure. Sporadic exposure results in intermittent symptom expression. Constant exposure gives chronic symptoms. Therefore, allergies must be considered as a potential causative agent, whether a patient has intermittent symptoms or chronic.

For example, a person sensitive to mold who lives in an area that had recent flooding may respond with chronic depression for months if mold spores or mycotoxins are continuously

present. Mold can also exist for years in locations such as heating, ventilation, and air conditioning systems, causing continuous exposure at home or work.

Depression and Anxiety

It is well established that inflammation and inflammatory mechanisms play a critical role in major depression. Elevations in proinflammatory cytokines and other inflammation-related proteins are common in depressive disorders (Raedler 2011). It should not be too surprising then to find that 71% of people with depression also have a history of allergies (Bell 1991). This is 3.5 times the rate of the general population (Gelfand 2010).

It is also known that depression scores increase with the exacerbation of allergy symptoms and that cytokines are elevated in the prefrontal cortex in victims of suicide (Postolache 2007).

There is an overwhelming preponderance of studies showing the relationship between allergies and depression (and anxiety). The causal relationship includes the triggering of the immune system and cytokines, the impairment of sleep through nasal obstruction resulting in psychiatric symptoms, and the negative effect on cognitive function associated with allergies (Sansone 2011).

Gastrointestinal inflammation also may be a significant contributing factor to depression (Fehér 2011). Food allergies can play a major role. It has been found, for example, that 25% of Irritable Bowel Syndrome patients, in whom GI inflammation is common, are sensitive to cow milk, wheat, egg, tomato, and chocolate. Symptoms improve on an elimination diet (Carroccio 2011).

Given that allergies commonly impact the respiratory and cardiovascular systems, it comes as no surprise that restricted breathing or asthma with accompanying tachycardia, so frequently found with allergies, is a common trigger for anxiety

and panic attacks. As with depression, as allergy scores increase, so do anxiety symptoms (Postolache 2008).

Additionally, it's been found that allergic rhinitis worsens existing psychiatric symptoms. The behavior of somatization, compulsion, depression and anxiety in patients with a history of eczema or asthma is much more obvious than in patients without such a history. Nasal obstruction has a conspicuous impact on somatization, compulsion, interpersonal sensitivity, depression, anxiety and psychosis, while nasal itching contributes to somatization, depression and anxiety (Lv 2010).

Celiac Disease

Although celiac disease (CD) is not an allergy per se, it is often considered one because it is an autoimmune disorder of the small intestine caused by a reaction to gliadin, a protein found in wheat and similar proteins found in other grains. An inflammatory reaction atrophies the villi lining of the small intestine, resulting in reduced ability to absorb nutrients, minerals and the fat-soluble vitamins A, D, E, and K. Typical symptoms include chronic diarrhea and other GI complaints, failure to thrive (in children), and fatigue. Standard treatment is removal of wheat and other offending grains from the diet.

One percent of the population is estimated to have CD and six times that many are believed to have gluten sensitivity (GS), an illness distinct from CD that does not include villous atrophy among its symptoms. Both CD and GS may present with a variety of neurologic and psychiatric co-morbidities (Jackson 2011). Ninety-seven percent of CD cases go undiagnosed and 41% of adult cases and 60% of child cases are asymptomatic (U. Chicago Facts).

Additionally, like asthma and autism, the percentage of CD cases is on the rise, increasing nearly fourfold in the past four decades from 1:501 in 1974 (Catassi 2010) to 1:133 in 2003 (Fasano 2003).

Remarkably, 35% of biopsy-proven CD cases have a history of psychiatric illness (Bürk 2009). Logic would then dictate that we would find an over-representation of CD and GS cases in a psychiatric population. Indeed, it's been found that diagnosed CD is found three times as often among those with schizophrenia (Eaton 2004).

After reviewing the increase of CD prevalence in a 50-year span, Mayo Clinic lead researcher and gastroenterologist, Joseph Murray, M.D., remarked, "Celiac disease is unusual, but it's no longer rare.... Until recently, the standard approach to finding celiac disease has been to wait for people to complain of symptoms and to come to the doctor for investigation.... We may need to consider looking for celiac disease in the general population, more like we do in testing for cholesterol or blood pressure." (Mayo Clinic 2009)

Given the high rate of psychiatric symptoms amongst CD patients and given the above facts and figures, the practitioner needs to consider:

- Patients with schizophrenia are at least three times more likely to have CD (meaning 3% of schizophrenia patients) and, if the same pattern follows, three times more likely to have GS (18% of patients).
- Odds are 33:1 that a patient with CD is unaware he/she has it.
- Nearly half of patients with CD will not manifest it yet may show psychiatric symptoms from it.
- Psychiatric manifestations will vary widely amongst CD patients.
- A gluten-free (GF) diet of CD and GS patients could eliminate or dramatically reduce psychiatric symptoms.

Given Dr. Murray's comments that the general public may need routine testing for CD, the matter is accentuated in a psychiatric population. Standard testing includes blood levels of the antibodies anti-endomysium and anti-tissue transglutaminase. If

these are positive, an endoscopic biopsy of the small intestine is done to confirm the diagnosis (U Chicago Tests).

However, recent research has indicated that positive blood tests alone (known as “potential CD”) may indicate the need for a GF diet because these patients show many of the markers of CD patients and may simply be in a pre-villous-atrophy stage (Bernini 2011).

Poisons and Toxins

A poison is a substance that can cause disturbance to an organism through chemical reaction or other activity on a molecular scale. A toxin is a poisonous substance produced within living cells or organisms. The adjective “toxic” refers to poisons and toxins. Thus, mercury is a poison and mycotoxins—metabolites produced by molds—are toxins. Both are toxic.

Poisons and toxins can create virtually any neuropsychiatric symptom from depression and suicidality to focus problems (as in ADHD) to paranoia and psychosis. It is incumbent upon the practitioner to consider this factor when a patient presents with psychiatric symptoms. An in-depth intake assessment can often help narrow the possibilities. The patient may even suspect a toxic influence. Of particular importance is occupation (e.g., exposure to industrial chemicals, mercury in a laboratory, or pesticides), hobbies (e.g., working with lead toy soldiers or chemicals in a workshop), and location of his/her habitat and workplace (e.g., mold in flooded regions or air pollution in urban areas). A particularly revealing question is, “Does anyone in your (neighborhood, factory, home, etc.) have similar symptoms?”

Certain classic neurotoxins, such as lead, mercury, and pesticides, are well known. Most medical students are told how the phrase “mad as a hatter” comes from the fact that mercury used by hat makers of old commonly resulted in a deteriorating psychosis. However, the list of substances that cause psychiatric symptoms is actually quite long—with new ones being

discovered continuously—and far too extensive for us to cover in this brief publication, though we can give some examples.

Hydrogen sulfide—common to volcanic eruptions, tanneries, and some paper mills—can affect mood states and the psychological stress response. In animal studies, it has been shown to alter levels of the neurotransmitters serotonin, norepinephrine, dopamine, aspartate and glutamate. Carbon disulfide, also a neurotoxin, has been linked to personality changes, mood disorders and suicides in occupational settings. A Duke University study, looking into why two neighborhoods in North Carolina had 10 times the state's suicide rate and 6.4 times the rate of primary brain cancers, found that a local asphalt plant emitted these and other neurotoxic compounds into the atmosphere. Hydrogen sulfide levels reached as much as ten times the acceptable standard (Duke Medicine 2004).

When farm workers receive what they consider to be a toxic level of exposure to pesticides with organophosphates, it has been found they have nearly six times the rate of depression as the general public (Stallones 2002).

Particulate air pollution, a pervasive exposure in modern urban environments, has been found to alter brain structure and cause cognitive impairment and depressive symptoms. Mice exposed to pollutants at the same levels of modern city inhabitants were found to have not only depressed states, but elevated cytokine expression in the hippocampus and altered dendrite growth (Fonken 2011).

Electromagnetic fields (EMF), though not a toxin or poison by definition, are nonetheless an environmental exposure found to have serious impact on mental health for some individuals. Electrical utility workers have double the suicide rate, for example, possibly due to melatonin depletion triggered through EMF exposure (van Wijngaarden 2000).

The treatment for toxic exposure will vary depending on the substance but the first line of defense would be, if possible, removal of the offending material. In the case of occupational or

habitat exposures, difficult choices may be involved requiring finding new employment or changing living quarters.

Summary

With allergies increasing and toxic exposures on the rise in our increasingly industrialized world, psychiatric symptoms from these environmental causes are also becoming more prominent. A wise physician, on the lookout for such risk factors, could save a patient years or even a lifetime of misdiagnosis and add years of more healthful living to what might otherwise be an existence of slow and mysterious decline.

6. Breathing Technique, Mindfulness, and Yoga

Christine Berger

Abdominal Breathing

Abdominal breathing, also called diaphragmatic breathing or belly breathing, is a core activity of meditation and yoga practices and an important therapeutic technique in its own right. Various Eastern religious and philosophical traditions cite the breath as a bridge connecting mind-body-emotions-spirit (Brown 2009). The breath can indicate the level of peace and contentment of a client. Anxious or depressed individuals breathe only from the upper chest, in a shallow fashion, whereas individuals who have an integrated mind-body system breathe deeply, from the diaphragm. Therefore, for clients with anxiety disorders or depression, it follows that breath training can serve as an empowering adjunctive treatment for these mental health challenges (Weil 2006). In fact, according to Philippott et al, cited by Brown and Gerbarg, changing breath patterns therapeutically “can account for at least 40% in feelings of anger, fear, joy and sadness” (Brown 2009).

Physical Effects of Breathing Practices

Diaphragmatic breathing decreases an excessively active parasympathetic nervous system. When practiced, it appropriately energizes the sympathetic nervous system on the inhale, and the exhale appropriately engages the parasympathetic system (Brown 2009). Proper breathing manages energy, breath volume, and adjusts other biological systems such as the endocrine, digestive, circulatory and neurochemical. Deep breathing stops the cycle of stress so prevalent in current society. Regulation of breath regulates heart function through the vagus nerve (Edwards 2008).

The Impact of Breathing on Anxiety and Depression

While Americans often think of yoga as a series of meditative postures, the system of yoga includes an emphasis on various breathing techniques which induce a variety of desired states. Brown and Gerbarg conducted an intensive study of Sudarshan Kriya yogic breathing (SKY). They found decreases in a variety of mood states such as depression, anxiety, stress and PTSD (post-traumatic stress disorder—severe anxiety symptoms that linger after traumatic events). They were especially curious about the mechanisms of change from this form of breathing. They found that SKY increased parasympathetic nervous system activity, relaxation of the stress response, hormonal release and thalamic response. In addition, they found that SKY breathing was effective as an early intervention with survivors of natural disasters, and they cite experience with 9/11 and the December 2004 tsunami. The authors emphasize the importance that healthcare providers comprehend the research and clinical evidence of these therapeutic benefits. SKY breathing has much to offer—at no cost—as an adjunctive treatment to conventional methods (Brown 2005).

SKY has been taught by the Art of Living Foundation (www.artofliving.org/us-en) for many years and has reached 6

million people in 150 countries. It consists of 4 parts: 3-stage slow resistance breathing (Ujjayi), bellows breath, om chanting, and cyclical breathing. Ujjayi has been shown to increase parasympathetic activity through vagal afferent inputs to the brain and improves heart rate variability. In addition, it improves low respiratory sinus arrhythmia, which has been associated with depression, anxiety, panic and obesity. Brown and Gerbarg also found evidence suggesting that yogic breathing has powerful physiological and psychological effects which may contribute to longevity (Brown 2009).

Various breathing training programs have reduced both anxiety and depression. A breathing training style called the Papworth Method, used to treat asthma and its accompanying anxiety, produced significantly less anxiety and depression in a treatment group as compared to a control group after five sessions and at a one-year follow-up (Holloway 2007).

Meuret et al investigated whether breathing training for the treatment of panic disorder was effective or merely placebo effect. Although the nine studies they examined had methodological challenges, the authors concluded that breathing training had something to offer panic disorder treatment (Meuret 2003).

Mindfulness

Mindfulness, the simple act of being in the present moment, has been known for centuries to be therapeutic. Mindfulness permits the individual to move out of the mind's "noise," thus reducing negative mental influences. Various techniques have been developed to assist individuals in focusing on the present, including outdoor activities, meditation, putting attention on the breath, and putting attention on a chant or sound. Myriad forms of meditation have been studied and practiced for thousands of years. The two forms most studied are mindfulness meditation (MM) and transcendental meditation (TM).

Mindfulness Meditation

Kabat-Zinn defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally in the unfolding of experience moment by moment” (p. 145). Kabat-Zinn also emphasizes the factor of non-attachment to outcome as unique in clinical applications (Kabat-Zinn 2003). In addition, Baer conducted a theoretical summary and analysis of mindfulness as an intervention. She cites that Kabat-Zinn has hypothesized how meditation helps with anxiety, that “sustained, nonjudgmental observation of anxiety-related sensations, without attempts to escape or avoid them, may lead to reductions in the emotional reactivity typically elicited by anxiety symptoms” (p. 128). She lists the elements of mindfulness that contribute to its effectiveness: exposure, cognitive change, self-management, relaxation and acceptance. In addition, she conducted a meta-analysis of mindfulness as an intervention and found effect sizes ranging from 0.15 (weak) to 1.65 (exceptionally strong). At follow-up, effect sizes ranged from 0.08 to 1.35. Baer also noted that patient satisfaction with mindfulness was high (Baer 2003).

Practitioner interest in mindfulness launched a study of many techniques that use mindfulness components such as Mindfulness-Based Cognitive Therapy (MBCT), which has been successfully applied to preventing depressive episodes (Segal 2005) (Teasdale 2000). Mindfulness appears to function as a means of creating psychic distance between an individual and depressogenic thinking which then results in empowerment to utilize mindfulness to stop relapses into depression before they occur. Chiesa and Serretti conducted a meta-analysis of MBCT and found that it was significantly better than usual care alone for depression in individuals with at least 3 depressive episodes. MBCT was also shown to reduce anxiety (Chiesa 2011). In addition, MBCT has been shown to reduce panic and may be an effective adjunctive treatment (Kim 2010).

Mindfulness Meditation and Anxiety Disorders

Numerous randomized controlled trials have examined the impact of mindfulness meditation on various anxiety disorders and depression (Saeed 2010). The most common treatment is Mindfulness Based Stress Reduction (MBSR) developed by Kabat-Zinn. Over 240 hospitals and clinics in the US and abroad have MBSR programs (Salmon 1998). Reibel et al looked at the MBSR program and found a 44% decrease in anxiety. They also found that this program enhanced functioning and well-being (Reibel 2001). A meta-analysis was conducted to examine effect sizes of MBSR on many health issues including depression and anxiety, and robust evidence was found for its effectiveness. The report stated that 20 studies revealed moderately strong effect sizes ($0.5, p < 0.0001$). The authors conclude that MBSR helps both clinical and nonclinical populations with mood issues and that MBCT helps reduce depression in 3+ episodes (Grossman 2004). Vipassana meditation seems to reduce alcohol and substance abuse in prisoners (Chiesa 2010).

Lee et al found that, compared to an anxiety disorders education group, a meditation-based stress management program demonstrated significant improvement on all anxiety scales (Lee 2007). According to van der Kolk, the nature of trauma requires that the treatment include a way to bring individuals back to their body and into the present through interoceptive exposure. He advocates both mindfulness and yoga as adjunct treatments for PTSD and has conducted many studies to support this claim (van der Kolk 2006).

Arias et al conducted a meta-analysis of meditation on a variety of medical ailments and found evidence that meditation helps mood disorders such as anxiety and depression (Arias 2006).

Transcendental Meditation

Transcendental meditation has been studied in research facilities since 1963 and much of the research is generated through the Maharishi University of Management in Iowa

(www.mum.edu) (Brown 2009). Brief, frequent meditation seems to produce significant changes in anxiety and depression using a mantram (concentrative TM) technique (Lane 2007). Yunesian et al conducted a pre-post study on an adult Muslim population, and results indicated that somatization and anxiety were decreased after 12 weeks of TM (Yunesian 2008). Also, Bormann et al conducted a random controlled trial and found that the treatment group among an HIV population had decreased trait-anger and increased spiritual connection when practicing TM (Bormann 2006).

Physical Effects of Meditation

Davidson et al conducted a randomized controlled trial and found there was more activity in the left-side anterior section of the brain which links to positive mood in people who meditate. In addition the authors found greater antibodies, which assisted in immune function (Davidson 2003). EEG studies have revealed significant increase in both alpha and theta brain wave activity during meditation. It activates the prefrontal cortex and anterior cingulated cortex, and EEGs show that long-term meditation is related to enhanced attention (Chiesa 2010).

Yoga

“Yoga” is a Sanskrit word originating in India. It means to yoke or to bind. The primary function of yoga is an integration of mind-body-spirit and emotions (Bhusan 1994). Yoga primarily consists of three components: asanas (postures), pranayama (breathing exercises) and dhyana (meditation) (Pilkington 2005). Yoga has ancient roots but it has been enthusiastically embraced by the West for physical and spiritual reasons in the past thirty years. It seems that yoga has far-reaching effects on a variety of ailments, but especially as an adjunctive treatment for mental disorders.

Physical Effects of Yoga

Yoga has been shown to reduce muscle tension, blood pressure, and autonomic sympathetic over-activation (Emerson 2009). It has also been shown to improve neuroendocrine and other hormonal activity. Yoga has also been demonstrated to help asthma, cardiac problems, cholesterol, irritable bowel syndrome, cancer, insomnia and fibromyalgia. It reduces sympathetic and increases parasympathetic nervous system operations. Cardiac vagal (parasympathetic) tone has been connected to the regulations of emotions and development of empathy (Brown 2009).

In recent years, yoga has been introduced into a variety of inpatient and outpatient psychiatric programs. One such program conducted a study to better understand the effects of yoga on mood. The authors found that one session of yoga in an inpatient program resulted in significant improvements in anxiety, depression, anger, fatigue and confusion (Lavey 2005). In addition, yoga has begun to be explored as an adjunct treatment for schizophrenia (Visceglia 2007). The author is a psychiatrist and yoga instructor who taught yoga to schizophrenic patients and found that yoga resulted in many benefits for this population, chief among them a sense of groundedness and empowerment about the body, which is unusual in this population. Also, since the primary treatment is medication, which is generally prescribed and managed outside their control, yoga allows the patients to feel a sense of control and empowerment over this chronic illness.

Yoga and Anxiety Disorders

Kirkwood et al (Kirkwood 2005) conducted a meta-analysis on the effect of yoga on anxiety disorders and found eight studies that provided important information. All had some data that favored yoga as a means to reduce anxiety. Within the analysis the most prominent study was a randomized controlled trial that

found Kundalini yoga significantly effective for obsessive-compulsive disorder (Shannahoff-Khalsa 1999).

Post-Traumatic Stress Disorder

The Justice Resource Institute, founded and run by renowned trauma specialist Bessel van der Kolk, conducted a study looking at the effects of yoga on various trauma survivors: rape survivors, war veterans, and survivors of childhood physical and sexual abuse, among others. Initial studies have revealed that yoga is an effective intervention. Trauma survivors have inherently “left their bodies” as a result of the trauma, and yoga and other meditative therapies gently bring the survivors back into embodied whole experience (Emerson 2009).

Yoga and Depression

Pilkington et al (Pilkington 2005) conducted a meta-analysis on yoga as a treatment for depression in the UK. The authors found 5 random controlled trials which used a variety of yoga methods for psychiatric symptoms ranging from mild to severe depression. Overall, they found that yoga was effective.

7. The CAM Psychiatrist at Work

Hyla Cass, Dan Stradford

Physicians' use of complementary and alternative medicine (CAM) treatments in psychiatry range from none at all to complete immersion. The general goal of most organized efforts to utilize CAM treatments is to integrate them with the best of mainstream medicine. Thus, the typical CAM physician is actually an integrative doctor, one who sees his or her CAM and orthodox options as a large toolbox from which to choose the best implements for the task at hand.

The Making of an Integrative Psychiatrist

The making of an integrative practitioner is a different path for each who travels it. Some doctors have a personal recovery experience through CAM and excitedly delve into it to bring similar benefits to their patients. Some grow up in homes where CAM treatments are used, so find it natural to bring such tools to their practice. Some come from cultures where CAM is part of traditional healing methods. Others see a patient or patients dramatically improve through CAM and investigate further out of professional curiosity. Some simply see that they are losing patients to CAM practitioners and feel that learning more of the subject would be a good business practice.

Doctors new to the subject typically start by reading articles or books (such as this one) or attending seminars. They may seek out professional associates who use CAM and learn from them. They may stop at booths at medical conferences. If they are serious, they can join organizations of CAM physicians, such as the American College for Advancement in Medicine (www.acam.org), Institute for Functional Medicine (www.functionalmedicine.org), or the International Society for Orthomolecular Medicine (www.orthomed.org). They can attend gatherings such as the 2010 Integrative Mental Health Conference at the University of Arizona. Also, the newly formed International Network of Integrative Mental Health (www.inimh.org) is a global organization to advance an integrative whole-person approach to mental health through education, research, networking and advocacy.

Common Concerns

Physicians new to CAM have common concerns. First of all, is it scientifically based? Hopefully, we have made the case in this guide that, indeed, much of it is, and the research continues to grow and appear with regularity in even the most conservative of medical journals. With internet access to the literature, finding evidence (or lack of it) of a treatment's efficacy is not difficult.

Another concern depends on what others in the profession may think. Repute is important and can affect patient referrals, professional advancement, teaching appointments, etc. Doctors commonly don't want to appear to their colleagues to be abandoning their orthodox roots. But part of those roots are the commitment to use the best science has to offer and *primum non nocere*—first, do no harm. Given the rapid advance of research into CAM treatments, the orthodox paradigm is shifting and, indeed, in many medical circles, the physician who ignores CAM may now be considered the less learned.

Other issues include the acceptance of CAM treatments as “best practice” by the local medical society or governing body and insurance coverage for CAM therapies. These matters, too, are evolving quickly and are best answered by consultation with local colleagues, medical organizations, and insurance representatives.

So what does the practice of a CAM psychiatrist look like? To provide that insight, we look into the protocols used by Hyla Cass, M.D. Dr. Cass has published eight books on CAM treatments, served as Assistant Clinical Professor of Psychiatry, UCLA School of Medicine from 1979 to 2005, and has made many media appearances to discuss integrative psychiatric approaches.

Dr. Hyla Cass on Integrating CAM Treatments

As a conventionally-trained physician with a specialty in psychiatry, I have incorporated nutrition and other natural techniques into my practice for more than twenty years.

At the core of this practice is a set of beliefs that have served my patients well:

- Treat the whole person—mind, body, spirit, and environment.
- Look for the deepest root problems beneath the symptoms, which includes using the best that science has to offer.
- Apply a continuum of treatments, always beginning with the safest, most natural, and most benign.

In the early days of my career, it was my interest in a more relational, holistic approach, coupled with an appreciation for the mind-body connection, that led me to psychiatry. During my residency at Cedars-Sinai/UCLA Medical Center, I eventually found that the standard “couch and Prozac” combination of psychoanalytic and pharmacological treatments had their limitations.

I was drawn to a more personal approach, where therapists were more directly caring and interactive with their patients. I

discovered art therapy with Helen Landgarten, then guided imagery and other more cutting-edge interactive techniques such as Voice Dialogue with Hal Stone. Not only did these methods work more quickly, but they clearly could affect the body in many ways, from relieving more obvious symptoms to boosting the immune system.

Then, during my family therapy fellowship, I discovered the “systems approach,” where the “identified patient” was not necessarily the true problem! It wasn’t just Johnny who was the “bad kid” or Jenna who was the depressed adolescent. In fact, there were secret family issues (Mom’s depression, Dad’s gambling) that had unbalanced the whole family dynamic, and the *children’s problems* were the *family’s symptoms*. Treatment would be successful only so far as the underlying issues (i.e., the parents’ problems) were uncovered and healed.

By the same token, I became aware that the symptoms my patients reported were just messages that something in their body systems was awry. They were clues that needed closer evaluation in order to uncover the real cause. I paid more attention to the mind-body connection and the doctor-patient relationship.

I carried what I had learned into my new medical practice and began to explore the influences of nutrition and lifestyle on health. I observed how imbalance in the body can affect the mind. The brain, after all, is an organ affected by its internal physiological environment.

It became obvious to me that psychotherapy is more effective once the brain is functioning properly. I went on to discover how many typical psychiatric complaints—*anxiety, depression, premenstrual syndrome (PMS), even schizophrenia*—are frequently related to biochemical imbalances. These can range from low blood sugar, viral and fungal infections, hormonal imbalances, allergies, and toxic overload to deficiencies of specific nutrients.

I am able to diagnose these conditions with the appropriate laboratory tests that give a scientific basis for treatment

decisions. Then I can often help correct the imbalances with natural approaches, including the use of well-researched nutritional supplements. In contrast, conventional physicians are most likely to prescribe first and test second, if at all, with problematic results. This approach is often like unplugging the noisy smoke alarm instead of looking for the fire.

In my move toward “integral” or holistic psychiatry, I found myself treating a variety of medical conditions, from chronic fatigue to irritable bowel syndrome. Patients don’t walk into our offices as disembodied heads. Our bodies do not separate into specialized compartments for the convenience of cardiologists, allergists, endocrinologists, or gastroenterologists. You can’t get to the right diagnosis and treatment without looking at all systems!

Every symptom reflects an imbalance somewhere in the body’s systems. Conventional medicine has segmented the body into the various specialties and often fails to address the reality of interactive systems.

Holistic or integrative medicine, on the other hand, addresses the interactive systems of the whole person. The patient is evaluated in a variety of ways and supplied with specific health prescriptions—for supplements, foods, exercise, natural hormones, mind-body techniques, and even prescription drugs when indicated. Moreover, the individual has to partner with the doctor in this process, both to carry out the regimen and to give feedback in order to fine-tune the program.

Compared to drug therapy, natural treatments offer safer, more user-friendly solutions with far fewer and less harmful side effects. They work with the body’s chemistry rather than adding what can be toxic substances to an already impaired body.

A Case in Point

I remember one early patient in particular, a 55-year-old college teacher named Jean whose story is pretty typical. She was being treated by her internist for high blood pressure, osteoporosis,

and heart palpitations. She was referred to me, a psychiatrist, because of her anxiety, depression, and insomnia. I could find no obvious psychological explanation for these symptoms, except maybe for the stress of her physical illness. She was taking an array of medications, with their attendant side effects. Based on some simple lab tests and my own clinical experience, I determined that a likely common cause was a magnesium deficiency.

After a brief trial on this inexpensive and common mineral, together with a multivitamin-mineral formula and essential fatty acids, Jean was able to decrease her medications. Encouraged by this result, she trusted me enough to eliminate some foods to which she was allergic, which helped her even more. In a short time, not only were her anxiety, depression, and insomnia gone, but she soon was medication-free, depending instead on a list of supplements (I added a few to those mentioned here) to restore her normal body chemistry.

Physical Inventory

I typically take a client's vital signs and ensure they have a primary-care doctor for major medical issues. I commonly do the following labs:

- CBC
- Chem-24 panel including cholesterol (HDL, LDL), triglycerides, magnesium, potassium, ferritin, B-12, folate, Hgb A1C, homocysteine, C-reactive protein
- (quantitative), fibrinogen, uric acid, 25-OH-vit D, and ANA (if indicated)
- Thyroid panel (TSH, free T4, free T3)
- If suspect thyroiditis, TPO and anti-thyroglobulin antibodies
- Middle age, peri-menopausal, andropausal: FSH, LH, pregnenolone, DHEA-S, IGF-1
- If 50+, estradiol, progesterone, testosterone (free, total)
- Male: PSA, DHT

Additional Labs

Depending on the patient's symptoms and information gathered from interviews and questionnaires, I may order:

- Genova One Test or Organix Test (Genova Diagnostics, www.integrativepsychiatry.net): This takes the guesswork out of knowing which nutrients a client needs for optimal health. The test provides information about oxidative stress and energy production by looking at potential insufficiencies of a group of nutrients, including B vitamins, carnitine, NAC (N-Acetyl-Cysteine), lipoic acid, and CoQ10.
- The Genova NutrEval (www.genovadiagnostics.com) or Metamatrix (www.metamatrix.com) ION panel (Individualized Optimum Nutrition) includes the organic acid urine test and a blood draw. It measures specific plasma or blood cell levels of vitamins, minerals, amino acids, fatty acids and toxic minerals such as mercury, lead and cadmium.
- Food Allergy IgG Panel: 90 Foods. This tests for IgG (immunoglobulin G) antibodies for 90 different foods. IgG antibodies are indicative of allergic reaction.
- Heavy Metals Testing (mercury, lead, etc.): This can be done through hair tests and if further investigation is needed, provocative urine testing can be used (the patient takes a substance that provokes the heavy metal to leave the body through the urine) (www.gdx.net, www.doctorsdata.com).
- Urine Neurotransmitter Tests: (NeuroSciences—www.neurorelief.com, or Sanesco—www.sanesco.net). These tests require some skill in interpreting since there isn't a linear relationship between urine and blood levels. Good resources for information on nutritional and functional approaches are the books *New Optimum Nutrition for the Mind* by Patrick Holford (go.Amedeo.com/twn) and *The UltraMind Solution* (go.Amedeo.com/kwq) by Mark Hyman, M.D.

Patient Questionnaires

The importance of patient information cannot be overemphasized. A few pieces of significant data gleaned from the patient—that he or she may even consider unimportant—can make or break a patient’s recovery. Here is a questionnaire my patients fill out.

If you answer “yes” to any of the following, please provide details below:

- Do you have a history of allergies, asthma, eczema? Are you taking any medication?
- Do you have food cravings? Which foods? Sugar? Carbs? (Circle here or list below.)
- Alcohol use—# of drinks per day _____
- Caffeine use—# of cups per day _____
- Past or current drug or alcohol use? Current cravings? Provide details.

Stress inventory:

Please check any current areas of stress in your life:

- Parents Children Spouse Work School
- Social life Finances Sex
- Do you find it hard to relax?
- Do your symptoms vary with stress?
- Are you a perfectionist?

Depression inventory

- Do you feel unfulfilled?
- Are you lonely?
- Are you sad?
- Do you cry often?
- Do you find it hard to enjoy anything?
- Do you often wish you did not exist?
- Do you withdraw socially?

Cognition inventory

- Do you have difficulty concentrating?
- Do you get confused at times?
- Do you often forget what you are saying in the middle of it?
- Are you absent-minded?
- Do you get lost easily? Is your mind less clear than it used to be?
- Do you find you are less intelligent than you used to be?
- Do you have difficulty making decisions?
- Any history of head injury? Loss of consciousness?

Sleep inventory

- Trouble falling and/or staying asleep?
- Do you wake at night to urinate?
- Do your legs jump a lot at night?
- Do you snore? If yes:
 - 1) Are you more than 20 lbs. overweight?
 - 2) Do you have periods when you stop breathing briefly
 - 3) Do you have high blood pressure?

Additionally, I use the questionnaires listed on the following five pages:

<p>Section 1: Lifestyle and stress</p> <ul style="list-style-type: none"> <input type="checkbox"/> Difficulty relaxing <input type="checkbox"/> Irritability <input type="checkbox"/> Insomnia <input type="checkbox"/> Tension headaches <input type="checkbox"/> Impatience <input type="checkbox"/> Sense of isolation from others <input type="checkbox"/> Taking on too much responsibility <input type="checkbox"/> Difficulty delegating <input type="checkbox"/> Recent major life change (marriage, divorce, birth of child, death of close relative, purchase of home, new job, loss of job, etc.) 	<p>Section 2: Brain chemistry</p> <ul style="list-style-type: none"> <input type="checkbox"/> Headaches <input type="checkbox"/> Excessive fatigue <input type="checkbox"/> Low energy <input type="checkbox"/> Weight gain/difficulty losing weight <input type="checkbox"/> Memory loss/difficulty concentrating <input type="checkbox"/> Sustained high stress level <input type="checkbox"/> Nervousness <input type="checkbox"/> Depression <input type="checkbox"/> Crying easily and often <input type="checkbox"/> Anxiety, irritability
<p>Section 3a: Thyroid function</p> <ul style="list-style-type: none"> <input type="checkbox"/> Excessive fatigue, specially first thing in the morning <input type="checkbox"/> Weight gain/difficulty losing weight <input type="checkbox"/> Dry skin <input type="checkbox"/> Dry, brittle hair <input type="checkbox"/> Constipation <input type="checkbox"/> Easily chilled; cold and/or numb hands, feet <input type="checkbox"/> Forgetfulness <input type="checkbox"/> Low sex drive <input type="checkbox"/> Depression <input type="checkbox"/> Outer third of eyebrow thinning <input type="checkbox"/> Excessive fatigue 	<p>Section 3b: Adrenal function</p> <ul style="list-style-type: none"> <input type="checkbox"/> Inhalant allergies such as dust, mold, asthma, hay fever <input type="checkbox"/> Sensitivity to smog, fumes, and smoke <input type="checkbox"/> Trouble falling asleep and, even more, staying asleep <input type="checkbox"/> Low blood pressure <input type="checkbox"/> Craving for salty foods <input type="checkbox"/> Sensitivity to weather changes <input type="checkbox"/> Dizziness when standing up suddenly <input type="checkbox"/> Dark blue or black circles under eyes <input type="checkbox"/> Susceptible to colds or infections <input type="checkbox"/> Puffy and swollen body (water retention)

Section 4a: **Blood sugar—
Hypoglycemia**

- Excessive fatigue
- Dizziness when standing up quickly
- Irritability, shakiness, or headache with missed meal, relieved by food
- Craving for sweets
- Heart palpitations when you eat something sweet
- Fatigue one to three hours after eating, especially carbs/sweets
- Use of caffeine to get energy
- Mood swings
- Poor concentration
- Wakefulness during the night with restlessness and worry

Section 4b: **Blood sugar—
Diabetes**

- Extreme thirst
- Frequent urination
- Extreme fatigue
- Night sweats
- Overweight
- Frequent infections, including yeast infections
- Family history of diabetes
- Slow wound healing
- Numbness or tingling in hands and/or feet

Section 5: Digestive imbalance, including dysbiosis, yeast (candida), and food sensitivities

- Use of antibiotics for more than one month at any time in your life
- Recent use of broad-spectrum antibiotics
- Digestive problems including bloating and gas
- Cravings for sweets, alcohol, bread, pasta
- Recurring vaginitis
- Cystitis, interstitial cystitis, or recurring bladder infections
- General feeling being tired all over
- Poor concentration and memory; feeling spacey at times
- Sensitivity to perfumes, strong smells, tobacco smoke
- Headaches
- Muscle aches
- Pain or swelling in joints
- Endometriosis or infertility

Section 6: Toxin overload

- Susceptibility to infections
- Nausea
- Clumsiness
- Frequent irritability and anger
- Memory loss, which may be intermittent
- Irregular heartbeat
- Dizziness
- Headaches
- Tinnitus (ringing in the ears)
- Numerous food allergies and/or sensitivities
- Unexplained fatigue

Section 7: Headaches, arthritis, and osteoporosis

- Generalized aches or stiffness
- Stiff, painful, or swollen joints
- Easy fracture; i.e., brittle bones
- Muscle spasms or cramps
- Leg cramps at night
- Back pain
- Bursitis or tendonitis
- Neck and shoulder pain
- Postmenopausal
- Extreme fatigue

Section 8: For Men Only

Latest PSA (Prostatic Specific Antigen) _____

Urinary problems

- Hesitancy
- Frequency of urination
- Incontinence
- Blood in urine
- Pain on urination
- Erectile problems
- Use steroids, testosterone, DHEA, erectile medications, e.g., Viagra
Specify _____

**Section 9: For Women:
Female Hormones**

Number of pregnancies

Date of last menstrual period

Use of birth control pills

Check all of the symptoms that apply to you within two weeks before your period:

- Weight gain
- Depression, anxiety, irritability
- Sore or swollen breasts
- Abdominal bloating or swelling
- Lower backache
- Craving for sweets
- Headaches
- Vaginal itching
- Recurrent vaginal discharge
- Irregular periods
- Breast lumps (fibrocystic breasts)
- Intensification of other premenstrual syndrome (PMS) symptoms

Check all symptoms that apply to you during your period:

- Bad cramps
- Heavy bleeding

Check all symptoms that apply to you if you are experiencing menopause or perimenopause:

- Hot flashes, night sweats
- Mood swings, irritability
- Insomnia
- Erratic or missed period
- Dry skin, hair, vagina
- Painful intercourse
- Known or suspected osteoporosis
- Joint pain
- Fibromyalgia
- Hysterectomy
- Loss of interest in sex

I also gather information on:

- Height, weight, age
- Major symptoms
- Previous treatments for these and other medical problems including: medications, surgery, hospitalizations, psychotherapy, etc.
- Typical daily diet, including snacks
- All current prescriptions, over-the-counter medications, and supplements
- Mental health history
- Family’s mental health history
- Family’s medical history
- Marital status, including years married and number of marriages
- Spiritual practices
- Profession and education

The Action Plan

From the patient information, physical assessment, and labs, a picture begins to emerge. While the client could be primarily suffering from stress, where lifestyle changes or counseling would be in order, more often I find physical issues—commonly a number of them—impacting behavior, emotions, and cognitive function.

Frequent issues that appear include:

- Nutrient deficiency such as B vitamins, minerals, amino acids
- Neurotransmitter depletion: can be due to genetics, poor diet or malabsorption due to gut disturbance (e.g., leaky gut inflammation, food allergy), among other factors

- Impaired methylation (most often genetic and treatable with specific B vitamins)
- Essential fatty acid deficiency
- Blood sugar imbalance
- Brain inflammation due to food allergy (e.g., gluten, dairy), heavy metals, infection, toxic exposure
- Hormone imbalance—e.g., thyroid, adrenal, estrogen, progesterone, testosterone
- Traumatic brain injury

From this we can formulate an action plan:

- Follow-up medical evaluation as needed, such as a referral to a specialist for serious endocrine disorders, a sleep study for a heavy snorer (sleep apnea, most often due to metabolic syndrome), or further labs for a client with markers of gluten sensitivity (not necessarily full-blown celiac disease).
- Lifestyle changes including living arrangements, job situation, marital counseling, and removing sources of stress.
- Exercise recommendations as needed.
- Hormonal treatments as indicated by lab results
- Supplements—amino acids, vitamins, minerals, fatty acids, and more—to restore normal body chemistry as indicated by lab results.
- Herbal treatments and other natural or safe approaches to reduce symptoms.
- Relaxation techniques including yoga and meditation.
- Dietary changes to reduce or eliminate junk foods, incorporate healthy foods, and remove offending foods, particularly those found on food allergy panels.
- Medication as needed, including avoiding an abrupt withdrawal from current medications. As symptoms

improve, a slow titration down from current meds may be in order.

As brain chemistry begins to normalize through proper nutrient and endocrine balance, patients usually begin to feel better. By re-evaluating the patient's progress at regular intervals, we adjust the plan as needed to keep him or her on a path to recovery and greater wellness.

Summary

Though learning the arts of integrative psychiatry takes some time and effort, the rewards are worth it. Instead of maintaining patients on a steady dose of medication, monitoring them for inevitable side effects and adjusting meds when things go awry, you start thinking in terms of recovery. Lots of my clients simply recover from their underlying bodily issues and get well. In fact, in many cultures worldwide, psychotic and other psychiatric conditions are regularly treated by family and community support, without the recurrence that we in the West assume is inevitable. Another large percentage improves markedly. Even those who remain symptomatic can often be helped with treatments such as herbs, supplements, or lifestyle changes that bring relief—regardless of the cause—without the downsides of meds.

That means greater wellness for my patients and happier lives for them and their families. That is a gratifying result for any physician.

8. Resources

American College for Advancement in Medicine, organization of integrative physicians: www.acam.org.

American Holistic Medical Association:
www.holisticmedicine.org.

Association for Comprehensive Neurotherapy, nonprofit that provides education on non-drug treatments for Tourette's, autism, OCD, and other issues: www.latitudes.org.

GreenMedInfo.com: Source for scientific research of CAM treatments.

Integrative Psychiatry listserv: A listserv for health professionals for the interchange of information on integrative treatments in psychiatry: www.alternativementalhealth.com/emailpro.htm.

International Society for Orthomolecular Medicine:
<http://www.orthomed.org>.

Institute for Functional Medicine:
www.functionalmedicine.org.

International Network of Integrative Mental Health:
www.inimh.org.

National Center for Complementary and Alternative Medicine:
<http://nccam.nih.gov>.

Safe Harbor, nonprofit for education about non-drug treatments in mental health: <http://www.alternativementalhealth.com>.

Walsh Research Institute, nonprofit for physician education in nutritional psychiatry: www.walshinstitute.org.

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10. Appendix

Conditions Causing Psychosis

Psychosis can be caused by the following (Diamond 2002):

Progressive neurological diseases

- Multiple sclerosis
- Huntington's chorea
- Alzheimer's disease and Pick's disease

Central nervous system infections

- Encephalitis
- Neurosyphilis
- Typhus
- Lyme Disease
- HIV infection
- Toxoplasma gondii (Pedersen 2011)

Space-occupying lesions within the skull

- Brain tumors
- Bleeding within the skull
- Brain abscesses

Metabolic disorders

- Accumulation of toxins from severe liver or kidney disease
- Disturbances in electrolytes, either too low a serum level of sodium or too high a serum level of calcium
- Acute intermittent porphyria
- Wilson's disease
- Systemic lupus erythematosus
- Caisson disease ("the bends")

Endocrine disorders

- Myxedema
- Cushing’s syndrome
- Hypoglycemia

Deficiency states

- Thiamine (B1) deficiency: Wernicke-Korsakoff amnesic syndrome
- Pellegra (B3 deficiency) and other B complex deficiencies
- Zinc deficiency

Temporal lobe epilepsy (or partial complex seizure disorder)**Drugs—legal and illegal.** For example:

- L-DOPA
- Amphetamine
- Hallucinogens
- Cocaine, crack, methamphetamines, stimulants

Conditions Causing Anxiety

Medical ailments that can present with anxiety include (Diamond 2002):

Neurological illnesses (represent 25% of medical causes of anxiety symptoms)

- Cerebral vascular insufficiency
- Anxiety states and personality change following head injury
- Infections of the central nervous system
 - Meningitis
 - Neurosyphilis

Degenerative disorders

- Alzheimer’s dementia
- Multiple sclerosis
- Huntington’s chorea

Toxic disorders

- Lead intoxication
- Mercury intoxication
- Manganese intoxication
- Organophosphate insecticides (similar to nerve gas) from chemical or insecticide exposure

Partial complex seizures

Endocrine disorders (represent another 25% of medical causes of anxiety symptoms)

- Hyperthyroidism
- Adrenal hyperfunction or Cushing's syndrome
- Hypoglycemia
- Hypoparathyroidism
- Menopausal and premenstrual syndromes.

Cardiopulmonary disorders

- Angina
- Pulmonary embolus
- Arrhythmias
- Chronic obstructive pulmonary disease
- Mitral valve prolapse

Pheochromocytoma (epinephrine-secreting tumors)

Medications

- Watch for asthmatic combinations of sympathomimetics and xanthines (e.g., aminophylline, theophylline)
- Watch for ephedrine in allergy patients
- Watch for hypoglycemic insulin reaction in diabetic patients
- Watch for thyroid preparations for thyroid disease or following thyroid surgery

Non-psychotropic medications

- Sympathomimetics (often found in non-prescription cold and allergy medications): epinephrine, norepinephrine, isoproterenol, levodopa, dopamine hydrochloride, dobutamine, terbutaline sulfate, ephedrine, pseudo-ephedrine
- Xanthene derivatives (asthma medications, coffee, colas, over-the-counter pain remedies): aminophylline, theophylline, caffeine
- Anti-inflammatory agents: indomethacin
- Thyroid preparations
- Insulin (via hypoglycemic reaction)
- Corticosteroids
- Others: nicotine, ginseng root, monosodium glutamate

Drug withdrawal (common cause of anxiety-type syndromes—caffeine, nicotine, and all sedative hypnotics, tricyclic antidepressants, and anticholinergics can cause withdrawal)

Psychotropic medications can cause anxiety symptoms

- Antidepressants (including MAO-inhibitors), drugs for treatment of attention deficit disorders (on rare occasions cause anxiety-type syndromes)
- Tranquilizing drugs: benzodiazepines (paradoxical response most common in children and in elderly), antipsychotics (akathisia may present as anxiety)
- Anticholinergic medications can cause a delirium which, in early stages, may easily be confused with anxiety: scopolamine and sedating antihistamines (found in over-the-counter sleep preparations) antiparkinsonian agents, tricyclic antidepressants, antipsychotics

Drugs—licit and illicit—can cause anxiety symptoms

- Caffeine—intoxication or withdrawal
- Nicotine—withdrawal even more than acute intoxication
- Stimulants—cocaine, amphetamines, etc.
- Alcohol or alcohol withdrawal

Conditions Causing Depression

The following medical problems can cause depression (Diamond 2002):

Postviral depressive syndromes, especially:

- Influenza
- Infectious mononucleosis
- Viral hepatitis
- Viral pneumonia
- Viral encephalitis

Cancer of:

- Pancreas (commonly presents as depression)
- Lung Cancer, especially oat cell carcinoma
- Brain tumors, either primary tumors or metastatic, may present with depression

Cardiopulmonary disease with hypoxia

Sleep disturbances and sleep apnea

Endocrine disease

- Hypothyroidism
- Hyperthyroidism or thyrotoxicosis
- Adrenal hypofunction (Addison's Disease)
- Adrenal hyperfunction (Cushing's Disease)
- Hyperparathyroidism: usually from small tumors of the parathyroid glands
- Post-partum, post-menopausal, and premenstrual syndromes

Collagen-vascular diseases (Example: Systemic lupus erythematosus)

Central nervous system disease

- Multiple Sclerosis
- Brain tumors and other intracranial masses such as subdural hematomas: Masses, especially in the frontal and temporal areas

Complex partial seizures

Strokes

Medications can cause depression

- Antihypertensive medications (drugs used to control high blood pressure): reserpine and alpha-methyl dopa are probably the worst, but propranolol has been implicated and all antihypertensives are suspect
- Digitalis preparations, along with a variety of other cardiac medications
- Cimetidine: used for gastric ulcer disease
- Indomethacin and other non-steroidal anti-inflammatory medications
- Disulfuram (Antabuse): usually described by patients as more a sense of fatigue than true depression
- Antipsychotic medications: Can cause an akinesia or inhibition of spontaneity that can both feel and look like a true depression
- Anxiolytics: all sedative hypnotics from the barbiturates to the benzodiazepines have been implicated both in causing depression and making it worse in susceptible individuals
- Steroids, including prednisone and cortisone

Drugs of abuse can cause depression

- Alcohol: Very commonly a cause of depression, as well as a reaction to depression
- Stimulant withdrawal

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