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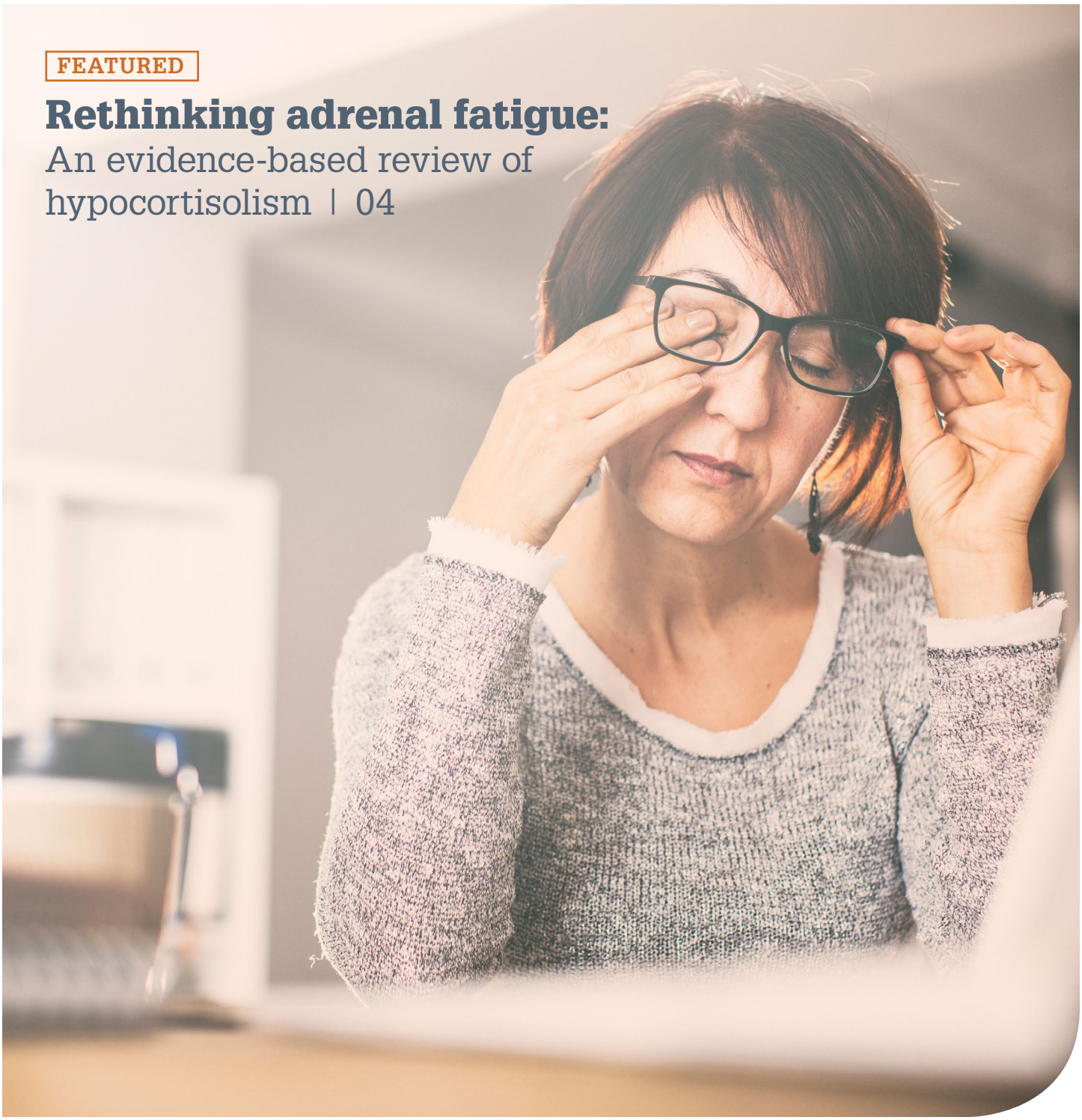

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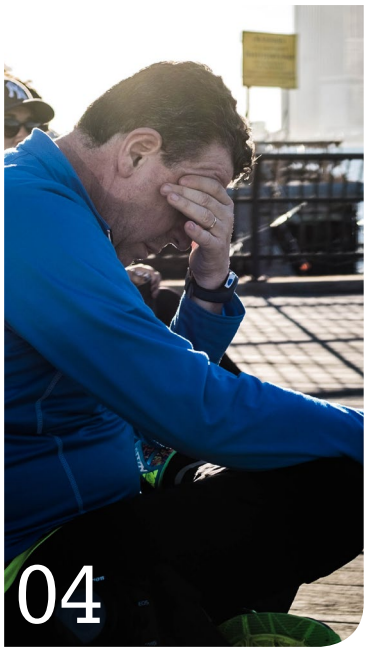

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An Integrative Practitioner Publication

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Looking back and moving forward

I HONESTLY CAN'T BELIEVE WE ARE ALREADY HERE. We're putting the final touches on 2018, the new year right around the corner. It is a time to reflect both on how far we've come and where we hope to go.

In my opinion, it has never been a more exciting time to be in integrative medicine. This year, our community continued to make progress, from non-pharmacologic approaches to pain management, to the food is medicine movement, to mindfulness and preventing burnout, to licensing and accreditation for key members in our field.

We've also seen some newer developments where integrative practitioners are beginning to get involved, including the serious like mental health and suicide prevention as well as the innovative like genetics- and genomics-based protocols and modernizing Traditional Chinese Medicine. The possibilities are endless heading in to 2019 and I am so excited to see where we will go.

With all these developments and changes, it can be challenging, as an integrative practitioner, to know where to turn. That's where we come in. We at Integrative Practitioner and the Integrative Healthcare Symposium are here for you. Whether you're looking to stay up-to-date on the latest industry news, learn best practices for patient care, or discover new ways to manage your business, look no further. Our library of articles, webinars, podcasts, e-books, and resources is updated daily, with you in mind.

I like to think of our community as having an "open door" policy. If there's something we could be covering that we're not, or a question you'd like us to investigate, please do not hesitate to reach out to us. Additionally, we like to celebrate the triumphs, and understand the challenges our practitioners face, so if you have a story to share, I encourage you to do so. By sharing our collective experiences, we can help one another not only advance the profession but thrive.

As the new year approaches, I challenge you to reflect on the progress you've made and start to think about how you might improve. Remember, we are always here to help and my "door" is always open.

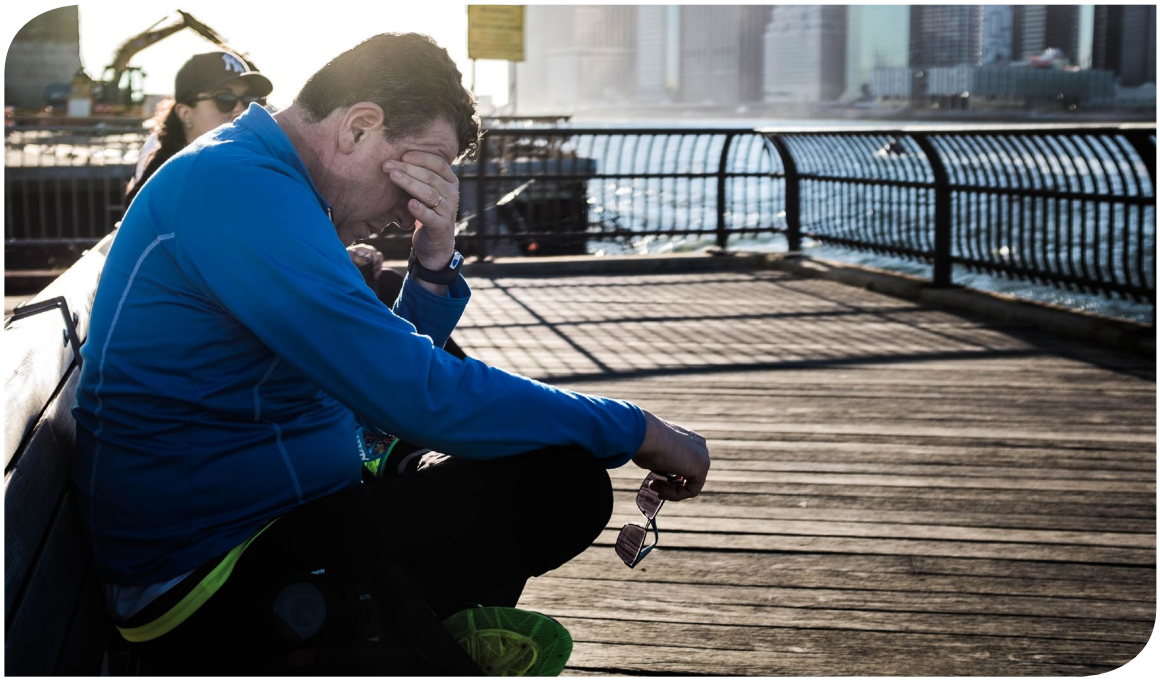
In Health,

Katherine Rushlau

Editor, Integrative Practitioner

Rethinking adrenal fatigue: An evidence-based review of hypocortisolism

BY LENA EDWARDS MD, ABOIM, FAARM, ABAARM



The stress response system (SRS) truly rivals the natural wonders of the world in its purpose and level of complexity. This sophisticated neurobiological network coordinates all physiological processes and maintains internal balance, or homeostasis, in unpredictable or potentially threatening environments. Unfortunately, the SRS has not evolved quickly enough to accommodate the "human condition," a dilemma not encountered by other organisms. Gifted with independent thought, advanced cognition, and the capacity to express emotion, humans can act and react outside of the primitive confines of the innate 'fight or flight' response. Moreover, a plethora of superimposed endogenous and exogenous factors have been shown to alter basal and stress induced SRS activation. Consequently, the human SRS is constantly immersed in an unfamiliar and ever-changing physiologic landscape which can ultimately overwhelm its adaptive capacity.

> "The origins of hypocortisolism are extremely complex and can reflect temporary or permanent impairment in innate HPA axis function under the influence of countless tangential factors."

The SRS is not a linear system originating in the hypothalamus and terminating in the adrenal glands. Rather, this extremely sophisticated system houses numerous other structures, organ systems, chemical mediators, and hormonal modulators whose collaborative efforts drive basal and stress induced SRS function. The hypothalamic-pituitary-adrenal (HPA) axis is a vital component of the SRS in so far as its effector hormone, cortisol, has widespread influence in regulating all metabolic processes as well as in determining basal SRS tone. However, it is the elaborate system of checks and balances imposed by other equally influential members of the SRS which prevents autonomous HPA axis hyperactivation and glucocorticoid (GC) induced catabolic tissue damage.

The origins of hypocortisolism are extremely complex and can reflect temporary or permanent impairment in innate HPA axis function under the influence of countless tangential factors. These factors are unique not only to the individual but also to the stressor itself, and their influence determines the presence, severity, duration, and clinical manifestations of hypocortisolism. In viewing the highly convoluted nature of the HPA axis through this lens, it is reasonable

to question the anecdotal notion of "adrenal fatigue." Despite the lack of scientific validation supporting its existence, adrenal fatigue continues to be widely accepted as a legitimate clinical diagnosis by many medical practitioners and patients who contend that chronic stress can induce hypocortisolism through autonomous adrenal gland 'exhaustion' outside of other regulatory controls. This concise review will highlight the primary mechanisms through which hypocortisolism can arise and the clinical consequences thereof.

Pathophysiological Mechanisms of Hypocortisolism

Basal and stress induced cortisol levels can be compromised by any process which impairs the structural or functional integrity of one or more components of the HPA axis. These conditions can be classified under the categories of primary, secondary, or tertiary adrenal insufficiency depending upon whether the disruption occurs at the level of the adrenal glands, the pituitary gland, or the hypothalamus, respectively. However, relative states of cortisol insufficiency can exist absent conditions that impair one or more components of the HPA axis. Such is the case when cortisol bioavailability is reduced or if tissue sensitivity to cortisol is impaired (Table 2).

In contrast with cortisol insufficiency, hypocortisolism broader in its scope and further encompasses variations in basal and stress induced cortisol release patterns. Hypocortisolism can manifest as a flattened diurnal cortisol release pattern, a blunted cortisol response to awakening, and/or an insufficient stress induced rise in cortisol levels. The mechanisms through which hypocortisolism evolves remain unclear but differ from those which give rise to absolute cortisol insufficiency. The process is further complicated by the fact that innate HPA axis function can be continuously, and in some cases permanently, altered through exposure to countless endogenous and exogenous factors (Table 1). Thus, hypocortisolism can evolve at different times and manifest in a variety of ways in the same individual or in similar individuals who are subjected to the same or different stressors.

The paradoxical phenomenon of hypocortisolism has challenged the longstanding belief that chronic stress uniformly causes HPA axis hyperactivation. Hypocortisolism was first confirmed in otherwise healthy individuals living under conditions of chronic stress. However, the pivotal work of Yehuda and colleagues in 1997 confirmed that chronic stress exposure, in this case in posttraumatic stress disorder (PTSD), could induced blunting of HPA axis activation. Subsequent research replicated their findings and additionally demonstrated an association between hypocortisolism and other adult stress related bodily disorders, including chronic fatigue syndrome (CFS), "burn out" and fibromyalgia (FMS).

> "The paradoxical phenomenon of hypocortisolism has challenged the longstanding belief that chronic stress uniformly causes HPA axis hyperactivation. "

The foundational groundwork established by Heim, Fries, and other pioneers in stress research has provided invaluable insight into the potential mechanisms leading to chronic stress induced hypocortisolism. The majority of research suggests that the presence of hypocortisolism during chronic stress exposure likely results from excessive cortisol mediated downregulation, mainly at the pituitary level. Adrenally mediated hypocortisolism has also been demonstrated, however it is occurs subsequent to downregulation of adrenal CRH, AVP, and ACTH receptors rather than to autonomously mediated "adrenal fatigue."

Notwithstanding, studies observed that hypocortisolism can be exaggerated by the duration of stress exposure as well as the number and intensity of the concomitant stressors.

It remains unclear whether hypocortisolism occurs as a maladaptive response or as an adaptive mechanism to protect the metabolic machinery from unregulated cortisol mediated tissue damage. Research conducted on pregnant mothers supports the contention that maternal hypocortisolism serves as adaptive safeguard to protect fetal HPA axis growth and development. Hypocortisolism observed in those who are critically ill or suffer from chronic infections is also believed to reflect an adaptive counter maneuver to facilitate upregulation of immune defenses in the face of ongoing threat.

Hypocortisolism and Stress Related Bodily Disorders

Much of the research on hypocortisolism has been conducted in children who experienced traumatic life experiences, including neglect, parental loss or separation, abuse of any kind, institutionalization, natural disasters, and acts of violence. The development of hypocortisolism during childhood has been associated with higher incidences of abnormal growth and development as well as mood disorders, substance abuse, behavioral disorders, and cognitive dysfunction. Moreover, the degree to which

these conditions manifest clinically appears to be directly related to the duration and timing of exposure, the nature of the stress, and the timing between assessment and the stress exposure. In fact, the evidence suggests that earlier and more intense the stress exposure, the greater the risk of permanent alteration in the "set point" of the HPA axis, and the more likely hypocortisolism will persist into adulthood.

Adult hypocortisolism, whether newly emerging or persistent from childhood, has been associated with the development of certain stress related bodily disorders, some of which are listed in Table 3. In fact, it has been suggested that approximately 25 percent of individuals suffering from stress related bodily disorders have associated hypocortisolism. Significant overlap has been observed in the clinical symptomatology of stress related bodily disorders, and this is most likely due to the similar pathophysiological processes which give rise to them. Fries and colleagues coined the term "hypocortisolism triad" to describe the three most prevalent symptoms observed in stress related bodily disorders, namely chronic fatigue, chronic pain, and stress sensitivity.

PTSD is one of the most well-studied stress related bodily disorders. It is characterized by symptoms of avoidance, reexperience of the traumatic event, and hyperarousal. Studies in both children and adults suffering from PTSD demonstrated not only impairments in HPA axis function but in immune system function as well. Some of these findings include:

1. Low baseline cortisol secretion
2. Increased GR binding to lymphocytes
3. Enhanced GC negative feedback on ACTH
4. Flattened diurnal cortisol release patterns
5. Blunted ACTH responses to CRH

Increased levels of IL-1, IL-6, and TNFα, have also been demonstrated and are believed to contribute to the fatigue, pain, depression, and sleep disturbances frequently seen in these individuals. It has been suggested that the extent to which PTSD occurs or persists may be dependent upon the stressor characteristics and the presence concomitant life stressors. However, individuals who develop hypocortisolism shortly after a traumatic event appear to be more vulnerable to developing subsequent PTSD.

CFS is another stress related bodily disorder, which has been strongly associated with hypocortisolism. This condition is characterized by persistent fatigue lasting at least six months with at least four of eight additional symptoms. As in PTSD, concomitant elevations in proinflammatory cytokines contribute to symptoms of malaise, depressed mood, sleep disturbances, and stress sensitivity. It has been suggested that CFS may represent a form of subclinical Addison's Disease given the significant overlap in symptomatology as well as the presence of hypocortisolism in both conditions. However, it remains unclear whether CFS occurs as a consequence of hypocortisolism or if hypocortisolism evolves as a delayed clinical consequence related to the symptomatic changes associated with CFS. Some studies have even suggested that the hypocortisolism observed in stress related CFS is the consequence of an HPA axis switch, whereby stress induced HPA axis hyperactivation eventually transforms into hypoactivation under the strain of ongoing stress, illness, or infection.

"It has been suggested that approximately 25 percent of individuals suffering from stress related bodily disorders have associated hypocortisolism. Significant overlap has been observed in the clinical symptomatology of stress related bodily disorders, and this is most likely due to the similar pathophysiological processes which give rise to them. "

Conclusion

The human SRS is a vast and incredibly sophisticated neuroendocrine network designed to maintain physiologic homeostasis and orchestrate diurnal metabolic functions. Under normal circumstances, the SRS is a dynamic system and exhibits a certain degree of regulatory flexibility. However, if the its baseline function is exogenously modified or its adaptive capacity is overwhelmed, the very system designed to maintain homeostasis can become the instrument of widespread physiologic chaos.

Addison's Disease and Cushing's Disease have long represented the clinical extremes of cortisol production. However, extensive research has since broadened our understanding of the HPA axis and the many factors which can modify its capacity and functional integrity. We now know that more subtle versions of hyper- and hypocortisolism manifest clinically and can arise through mechanisms, which do not directly affect the structural integrity of one or more components of the HPA axis. Furthermore, the presence and extent to which innate HPA axis function is altered is preordained by antenatal factors and continuously reconfigured by countless environmental modifiers.

The paradoxical observation of stress induced hypocortisolism serves as a testament to the extremely complex nature of the SRS. Moreover, the clinical relevance of hypocortisolism can no longer be discounted because of its association with stress related bodily disorders. However, an evidence-based approach to hypocortisolism is of paramount importance if diagnostic and therapeutic measures are to be properly implemented. To this end, we offer the following summary of the scientific evidence:

1. Chronic stress exposure can give rise to hypocortisolism through adaptive downregulation of the central components HPA axis
2. Hypocortisolism has been associated with stress related bodily disorders but can also exist in asymptomatic individuals living in chronically stressful environments
3. Hypocortisolism can reflect an adaptive counter maneuver designed to enhance immune defenses during periods of critical illness, trauma, or infection
4. In the event that hypocortisolism is adrenally mediated, it occurs after downregulation of adrenal AVP, CRH, and ACTH receptors, not through autonomously mediated "adrenal fatigue." ●

EDITORS NOTE: *Edwards is an Internist who is also Board Certified in Integrative Medicine, Board Certified and Fellowship Trained in Anti-Aging & Functional Medicine, and Fellowship Trained in Integrative Cancer Therapy.*

CLICK HERE TO READ THE ORIGINAL ARTICLE, INCLUDING REFERENCES AND TABLES.

The genetics of nutritional deficiencies

BY CORIE EDWARDS, ND

Nutrient deficiencies may seem like a thing of the past, but some may be surprised to know that there are still several key vitamins and minerals that adults in the U.S. are lacking.

According to the CDC's Second Nutrition Report from 2012, the top nutrients Americans are deficient in are:

- **Vitamin B6 and B12**
- **Vitamin D, C, A, and E**
- **Iron**
- **Folate**

These nutrients are key to supporting the systems and functions of the human body. The first line of treatment when managing someone with nutrient deficiencies is to supplement the lacking vitamin or mineral. However as many practitioners have come to find, some patient's levels can still stay stubbornly low despite treatment. When looking to understand this response it is important to take genetics into consideration.

I recently saw a patient that had chronically low vitamin D levels. As a Naturopath in the Pacific Northwest, this is a common patient encounter. What was interesting about this situation is that, unlike other patients, her serum levels did not rise much after supplementation of vitamin D3. I tried prescribing 15 minutes of sunbathing each day to encourage the body's natural process for creating vitamin D. This, too, had a small, slow effect on raising her serum levels of vitamin D.

After genetic testing, the reason for this became clear. The patient had two copies of the risk allele for CYP2R1, a gene that encodes for the enzyme responsible for the second to last step in vitamin D metabolism. This enzyme functions in the liver and helps to produce the active form of vitamin D calcitriol, which can be supplemented as a prescription drug. The risk allele caused this patient to create an enzyme that functioned at a slower rate than the normal enzyme would. I immediately prescribed calcitriol 0.25 mcg by mouth once a day to my patient and, within three months, her levels were within the optimal range of 50-70 ng/mL.

Research has shown that certain genes have risk alleles that can

increase a person's chance of being deficient in certain nutrients. Some of the most important markers for nutritional deficiencies are genes called BCM01, FUT2-1. GC, NADSYN1/DHCR7, CYP2R1, MTHFR, and TMPRSS6. These genes affect physiological process like absorption, metabolism, and transportation of specific nutrients. Patients with risk alleles in these genes can find that they have low levels of the corresponding vitamin or nutrient despite supplementation. So how do these genes affect nutrient levels in the body?

> "Understanding a patient's individual biochemistry can not only help to identify potential risk for deficiencies, but also to develop a more effective treatment plan."

Each gene encodes for a product that plays an important role in the body. For instance, according to a January 2018 paper by Luigi Ferrucci, MD, Ph.D, it was reported that BCM01 encodes for a gene that can cause low conversion of carotenoids (vitamin A precursor) to retinol due to defect in enzyme function.

Another example is the FUT2-1 gene, which can affect absorption of B12 through the GI tract. Certain genotypes have been shown to have lower B12 levels, according to by a study regarding common variants of FUT2 published in the journal Natures Genetics.

Genes that are involved with maintaining healthy levels of vitamin D include GC, NADSYN1/DHCR7, VDR, and CYP2R1. Several studies conducted that show mutations in these genes can affect vitamin D levels through different mechanisms. These mechanisms include decreased conversion of the vitamin D metabolite to the active form, transportation of vitamin D to target tissues, and absorption.

Another important nutrient is folate. The synthetic version of this is known as folic acid. Research shows that the MTHFR gene was found to have one risk allele associated with decreased function of the enzyme it encodes for; C677T and another that reduced function when associated with C677T called A1298C. The MTHFR gene encodes for an enzyme called methylenetetrahydrofolate reductase, which converts 5-10-methylene tetrahydrofolate to 5-methyltetrahydrofolate (5-MTHFR). 5-MTHFR is used as a co-substrate to recycle homocysteine to methionine. Iron deficiencies have been linked to certain risk alleles found in the TMPRSS6 gene.

Other research has shown that people with a risk allele in this gene have been shown to have an increased risk for a lower rate of iron absorption.

Understanding a patient's individual biochemistry can not only help to identify potential risk for deficiencies, but also to develop a more effective treatment plan. For example, if the risk allele affects enzyme function causing a decrease in conversion of a substrate into the next form, it may benefit the patient to supplement with the final product of that metabolic pathway. However, if the risk allele causes a decrease in absorption of a specific nutrient then a different delivery system, like injecting the nutrient or supplementing with a liposomal form is often enough to quickly fix the problem.

A common defect in the metabolic pathway of nutrient deficiencies is with transportation of the vitamin to specific tissues. Genes that encode for transportation proteins can create a product that may not bind a nutrient as easily, this can cause a decrease in supply to the tissue despite the patient taking in normal amounts. Lower more frequent doses of the nutrient may help to give the body a constant supply of the much-needed vitamin or mineral without overwhelming the transportation system.

Even in established societies with ready access to food and nutrients, people can be deficient in key nutrients. Genetics may play a role in this causing certain people to be more susceptible to lacking a specific vitamin or mineral. Understanding the person's specific genetic predisposition can help a practitioner to develop a more beneficial nutritional treatment plan. ●

EDITOR'S NOTE: *Edwards is a staff physician at Kashi Clinical Laboratories where she helps to support and improve their genetic testing department.*

CLICK HERE TO READ THE ORIGINAL ARTICLE, INCLUDING REFERENCES AND TABLES.

Post-traumatic potential

BY NANCY GAHLES, DC, CCH, RSHOM(NA), OIM

The recent event of a soccer team and their coach trapped in a cave in Thailand has us all riveted with the suspense of their rescue. We closely followed, day by day, the stellar team of Thai Navy Seals, experts, and volunteers on this mission. We, too, experienced the trials, the fears, and the suffering of the rescuers, the children, and the coach. By the act of witnessing, we lived the experience along with them.

One discussion among network TV anchors centered around the feelings of being a mother to one of the trapped children.

"I simply cannot imagine how I would feel if that were my son in there."

"I don't know how I would cope."

"If I lost a child like that, I would never be the same."

"Imagine the horror of those weakened children as they traverse miles of dangerous tunnels to make it out alive."

In psychology circles, this is called vicarious traumatization. That is, by imagining, visualizing, or experiencing the trauma of someone else, you are traumatized as well. The term was coined specifically with reference to the experience of psychotherapists working with trauma survivor clients. Now, with the widespread and continuous coverage of traumatic events and the available content of the emotional aspects of the people involved, an empathetic relationship with the traumatized and their reports of traumatic experience develops. The viewer potentially experiences the same or similar form of countertransference that a therapist might from exposure to the traumatic material presented.

> "If I were to wish for anything, I should not wish for wealth or power, but for the passionate sense of the potential, for the eye which, ever young and ardent, sees the possible. Pleasure disappoints, possibility never. And what wine is so sparkling, what so fragrant, what so intoxicating, as possibility."
>
> —Soren Kierkegaard."

As you might expect, vicarious trauma can manifest in emotional disturbances in the feeling realm, such as sadness, irritability, mood swings, and grief. Understandably, those people with a history of personal traumas will be more vulnerable to more intense symptoms. These can include social withdrawal, aggression, and even violence.

Physically, one might even feel sick about it, manifesting in stomach pain or irritable bowel symptoms. Our trusted library of emotions and painful memories, stored in the limbic system, will kick in to replay the old painful incident and the body will respond with the protective nervous system responses of fight, flight, freeze, or faint.

Characteristics of these responses are seen in the keyed-up irritability and aggression of the fight response. The sympathetic stimulation of the adrenals causes the stress hormones to flood the organism with the mechanisms to enable flight from the threat. The heart races, respiration increases, muscle tension, cramping, and panic attacks can result. Fright accompanies this state with trembling, startling, hyperarousal and hypervigilance.

The freeze state subsequently ensues and, as we are "domesticated" after all, while watching the evening news we are not wont to run away from the house to escape the threat of the perceived traumatic event. Sitting on the edge of our chair then, we may experience the numbness, parasthesias, and/or anesthesia of various body parts. Frozen joints manifesting as arthritic flare-ups, bursitis, compression and entrapment syndromes all speak the body's language of traumatization. The mental aspects of this state are seen in complaints of brain fog, decreased concentration, lack of focus, memory weakness, and word hunting.

Each person will experience vicarious traumatization as befits their personal experiences and susceptibility. I have seen many suffer with the faint response with actual spells of fainting ranging to a less severe faint response of dizziness, vertigo, weakness of body parts, difficulty with walking and balance, and shortness of breath.

We are living in a time of unparalleled ability to witness global horrific events. We are given minute details of school shootings, massacres, and violence on all levels. We witness, on a daily basis, man's inhumanity to man. And it takes a toll. Slowly but surely, it seeps into our consciousness and we must experience it. Or, we suppress the emotions that threaten to unravel us. Suppression is an impossibility for surely it will appear somewhere else. Just like the arcade game, Whack-A-Mole. A mole pops up, you whack it down, and surely the next mole pops up. Ad Infinitum.

The poet Alexander Pope is famously quoted in a phrase from his An Essay on Man as saying, "Hope springs eternal in the human breast…"

Hope, as a vehicle of possibilities, was immortalized by Emily Dickinson as well:

"Hope is the thing with feathers-

That perches in the soul-

And sings the tune without the words-

And never stops at all-"

The potential that exists after the trauma is the same potential that is inherent in every breath we take and with every beat of our heart. Each moment holds the potential, the possibility...of a new moment. Therein lies the key to success. Conscious awareness of the feelings that are evoked by the events witnessed or experienced, coupled with a deep listening to your body's expression of that feeling and the thoughts that you tell yourself about that will bring about a revelation of the possibilities that you can begin to employ to restore equilibrium in your Self. Your whole self can be reintegrated. You can re-new your Self, imbue your Self with positive potential.

It's a heady concept but it isn't a new one. Discussion of this conscious awareness, this higher consciousness that portends all the possibilities is called by the Jewish sage Maimonides "awakening from our sleep." In The Wisdom of Maimonides, he says, "At times, revelation shines so brilliantly that we perceive it as clear as day. [But] then our nature and habit draw a veil over our perception, and we return to a darkness almost as dense as before. We are like those who, though beholding frequent flashes of lightning, still find themselves amid the thickest darkness of the night."

Habituation, conditioned responses are created by our Selves by rumination. When we continue to dwell upon a past or painful experience we continue to breathe life into it in every moment. We fan the flames of suffering. The Buddha calls this the second arrow. The first arrow is that which struck us. The second arrow is the one we pick up and stick ourselves with again, perpetuating the suffering.

We do have the power to change this around. I call the strategy name it and reframe it. Call the suffering out and give it another context. One that feels better. One coping strategy I like to begin with is to create space for something else to happen. Focused, illuminated space. This is a directive in the Aramaic Lord's Prayer as well. Nethqadash shmok,the second line in the Aramaic Lord's Prayer calls us to create space, hallow a space for the sacred to dwell within us. The phrase calls us to soften the ground of our being, free us of the constrictions that keep us from allowing sacredness to enter our lives.

Through my experience treating numerous people suffering from post-Traumatic stress, I have found that the potential, the array of possibilities for healing arises from within when we cultivate gentleness with our Selves, create a space for Loving Kindness to arise, dwell in the silence, in calm abiding.

Christina Feldman in her book Silence, says:

> "Profound stillness is not just the territory of the ancient mystics and sages. There are times when each of us needs to seclude ourselves and turn our attention within. We may not be drawn to the cloisters of a monastic cell or to a mountain cave, but we can learn the art of creating sacred spaces, times of listening, and moments of pause. This is where we rediscover ourselves, renew ourselves, and find the balance and wisdom to re-enter our life with a heart filled with compassion and balance."

If, (being a possibility), one can be traumatized vicariously through holding images in your mind and body, then it would follow that one can likewise use the imagination to create new possibilities, endless potentials. ●

EDITOR'S NOTE: *Gahles is CEO and Founder of Health & Harmony Wellness Education and Center for Integrative and Holistic Healthcare, TeleHealth & Harmony and Spirit of Love~The Rockaway Sangha.*

CLICK HERE TO READ THE ORIGINAL ARTICLE.

What do chiropractors treat?

BY JAMES LEHMAN, DC, MBA

As a result of a motor vehicle incident, I injured my lower back. Unfortunately, the condition caused severe pain and affected my ability to run because of back spasms. The team doctor was a medical doctor who had no idea why my back hurt. Hence, I suffered with lower back pain and spasms for three years before an employer suggested I visit his brother for a chiropractic examination.

As a child, I was under the impression that chiropractors were "quacks." Yet, the pain was not going away, and I thought, why not see a chiropractor. I will never forget the first visit. The doctor examined me and then told me that he could probably get rid of the pain. His confidence and reassurance that the treatment would not hurt me or make the pain worse made me less nervous about someone cracking my back. To my surprise, after one treatment, the pain was resolved. I suffered for years because I had no idea what a chiropractor could do for my back pain.

My chiropractor was kind enough to relieve my pain and then suggest that I consider chiropractic medicine as a career. I laughed because, at the time, I was studying to become a horticulturist.

I visited my chiropractor a couple of times that year for check-ups. On each visit, my chiropractor asked if I gave any thought to becoming a chiropractor. Finally, I asked him why I should become a chiropractor. He said that he thought that I would be good at it and there was a chiropractic school in St. Louis, not far from my home in Belleville, Illinois. The doctor then offered to take me for a tour of the college. The visit convinced me to change my academic plans. My chiropractic journey then evolved from patient to potential chiropractic student.

To my surprise, Logan College of Chiropractic accepted my application and suggested that I commence classes before the end of that summer. I thought the Dean of Admissions was going to thank me for my interest and then advise me to finish my undergraduate degree. Instead, I was told that with only two or more years of undergraduate studies, I could begin my academic training to become a chiropractor.

Now, 50 years later, I sit here writing an article that will address what chiropractors treat. At Logan, we were taught to perform comprehensive physical examinations, which included postural and musculoskeletal evaluation of the patient. The evaluation and management of the patient led to a diagnosis and then a consultation with the patient. The report of findings normally included a treatment plan that addressed any biomechanical problems, but also prevention and wellness advice. At that time, it was unethical for a medical doctor to communicate with a chiropractor regarding patient care. In fact, the American Medical Association advised members that it was unethical to even be in the same building with a chiropractor. Hence, it was necessary for a chiropractor to be able to perform their own radiographic studies and lab work in addition to a comprehensive physical examination to complete a differential diagnosis.

Times have changed in healthcare. Medical doctors and chiropractors are permitted to work together, which enables each provider to specialize in their area of expertise. So, now, I pose the question, "What do chiropractors treat?"

Well, most often chiropractors treat humans in pain.

Although some chiropractors pursue post-doctoral training and board certification to specialize in non-surgical orthopedics, neurology, rehabilitation, internal diagnosis, sports chiropractic, veterinary chiropractic medicine, radiology, and pediatrics, the majority of chiropractors are not board-certified specialists. The majority of chiropractors evaluate and manage patients complaining of pain. A recent study indicates that patients most often seek chiropractic care for low back pain, neck pain, and problems in the extremities.

Now, if I ended the article at this point, you would realize that patients in pain seek chiropractic care, but you would not comprehend the neuromusculoskeletal conditions that cause the low back pain, neck pain, and extremity problems. As a board-certified chiropractic specialist, an Associate Professor of Clinical Sciences at the University of Bridgeport, and a Post-Doctoral instructor in neuromusculoskeletal medicine, I assure you that performing a differential diagnosis is the key to successfully treating these patients in pain. The chiropractor must reveal the cause of the pain with a neuromusculoskeletal evaluation that leads to a working diagnosis. The chiropractor must reveal the painful tissue and treat it properly.

I want to share with you a couple of the more common diagnoses that cause the low back pain patients to seek relief from a chiropractic clinician and offer brief descriptions. Of course, acute low back pain is often the result of a soft tissue injury caused by athletic activities, motor vehicle incidents, or lifting injuries. The chiropractor must differentiate the soft tissue injury. Did that patient strain the low back muscles or sprain the lumbar ligaments? The treatment plan and prognosis will vary considerably based upon not only the severity of the injury but the tissue damaged. A muscular strain will most often heal quicker that a ligamentous sprain. If the patient is also suffering with bio-mechanical joint dysfunctions, the chiropractor will most often provide spinal manipulations. Historically, spinal joint dysfunction has been referred to as a subluxation.

Often, patients will present with chronic low back pain because of an acute lumbar strain/sprain that healed with residual biomechanical dysfunction of the spinal joints with resultant compression and/or irritation of nerve roots or smaller branches off of the nerve roots in the thoracolumbar spine that have gone undetected and not treated. Dr. William Morgan wrote an excellent article that described Maigne's syndrome, a common cause of acute or chronic low back pain. I offer an excerpt from his Clinicians Corner manuscript:

The French physician, Robert Maigne, proposed in his writings in the 1970 -80s that a thoracolumbar facet syndrome could be responsible for causing referred pain to the regions innervated by those segment's posterior rami and the peripheral nerves which originate in that region. Maigne also proposed other techniques, such as skin rolling, to determine the tissue quality and other clinically oriented criteria which could be used to diagnose thoracolumbar syndrome. Dr. Maigne identified the syndrome which now bears his name with these observations:

- *Unilateral lower back pain, usually in the sacroiliac region*
- *Inguinal or testicular pain*
- *Abdominal pain*
- *Gynecological symptoms or pain*
- *Pubic pain*

Normally, Maigne's syndrome responds very well to chiropractic care including spinal manipulation and soft tissue treatments that decompress the cluneal nerves.

These are just a dozen of the diagnoses that cause spinal pain and problems with the extremities that are treated by chiropractors:

1. **Degenerative joint and disc disease of the spine**
2. **Myofascial Pain Syndrome**
3. **Thoracic Outlet Syndrome**
4. **Cervico-brachial neuralgia**
5. **Radial Tunnel Syndrome**
6. **Wartenberg's Syndrome**
7. **Lumbar or cervical discopathy**
8. **Sciatic neuralgia**
9. **Piriformis Syndrome**
10. **Spondylotic spondylolisthesis**
11. **Axillary nerve compression**
12. **Cervicogenic headaches**

In future articles, I will address these specific neuromusculoskeletal conditions that cause painful conditions, which chiropractors evaluate and manage with non-pharmacological, chiropractic treatments. ●

EDITOR'S NOTE: *Lehman is an Associate Professor of Clinical Sciences at the University of Bridgeport/College of Chiropractic and Director of Health Sciences Postgraduate Education (HSPED).*

CLICK HERE TO READ THE ORIGINAL ARTICLE.

The safe use of essential oils

BY KAREN MALKIN, NBC-HWC

Essential oils have soared in popularity in the past decade and are commonly found in people's medicine cabinets, but how can they be used to promote wellness? And more importantly, how can practitioners use them safely in a therapeutic setting?

According to the National Association of Holistic Aromatherapy, essential oil therapy is "the art and science of utilizing naturally extracted aromatic essences from plants to balance, harmonize, and promote the health of body, mind, and spirit." The therapy's aim is to unify physiological, psychological, and spiritual processes to enhance one's innate healing potential.

In the early '80s, the Fragrance Research Fund began a collaboration with Yale University's psychophysiology department to study ways in which aroma impacts behavior. One study followed 2,000-plus people over two decades. The disorders researched include fatigue, migraines, pain, cravings, insomnia, anxiety and depression, sexual dysfunction, memory loss, and more. They found fragrance works naturally, imparting few if any side effects.

More recent studies set out to show aroma's positive physiological effects on the nervous system, blood pressure, heart rate, brain waves, and more. Further advanced research on the endocrine, immunological, and pharmacological effects of aromas is underway.

What Are Essential Oils?

Essential oils are highly aromatic substances found in specialized cells or glands of certain plants. These essential oils are used by the plant for protection from predators and to attract pollinators. Essential oils may be found in virtually any part of the plant: seeds, flowers, fruit, leaves, stems, roots, bark, wood, needles, and resins. After the distillation of a plant, the aromatic substance is referred to as an essential oil.

Blending Considerations

When crafting an essential oil blend for yourself, a family member, or patient, here are the considerations to keep in mind:

- **Therapeutics** — Based on chemical components and the physical effect on the body.
- **Aroma** — Which scents appeal?
- **Energetics** — How do the oils elicit sensations such as "cooling," "grounding," "warming," or "uplifting." Plant parts (roots, leaves, seeds, flowers) play a role here.
- **Safety** — Who is the oil for? Are you formulating for a pregnant woman? A child? An older person? This will impact which oils you select in your blend.

an antidepressant, decongestant, sedative, promotes calming, relieves headaches and muscle aches, healing for burns

Great for cleaning, antifungal, antiseptic, antimicrobial, anti-inflammatory, decongestant, expectorant

Anti-inflammatory, antifungal, circulation stimulant, pain relief, nausea, headaches, settles stomach

Antiseptic, wound healing, expectorant, pain-relieving, relaxing to the nervous system, used to enhance spirituality

Uplifting aroma useful for all respiratory conditions, decongestant inhalant for colds, antiviral, antibacterial

Safety, Dilution, and Storage

It takes a lot of plant material to make a small amount of essential oil—they are highly concentrated. For example, it takes 50-60 roses to produce one drop of rose essential oil. By extension, you only need a very small amount to achieve a desired therapeutic effect. Very few, if any, essential oils should be ingested or applied directly to the skin. In virtually all cases, it is advisable to dilute essential oils into a carrier oil or substance. You do this by combining the oils with "carriers" (such as vegetable, seed, or nut oils) before applying them to the skin.

Here are some general guidelines for dilution:

CARRIER	1% DILUTION	2% DILUTION	3% DILUTION
1 oz.	5-6 drops	10-12 drops	15-18 drops
2 oz.	10-12 drops	20-24 drops	30-36 drops
3 oz.	15-18 drops	30-36 drops	45-54 drops

- **1 percent Dilution** — Use for children under 12, people older than 65, pregnant women, and people with long-term illnesses or immune system disorders. A 1 percent dilution is also a good place to start with those who are sensitive to fragrances, chemicals, or environmental pollutants.
- **2 percent Dilution** — Use for general health-supporting blends for skin care, bath oils, cleaning solutions, and blends you like to use daily.
- **3 percent Dilution** — Use when creating a blend for a specific, acute health concern, such as pain relief or a cold or flu.

Essential oils are volatile, meaning they evaporate easily. They must be stored in dark, airtight, glass bottles. Exposure to light, oxygen, and heat will break down the oils and they can become "oxidized" and skin irritating. If oils are stored properly, they may last 6–8 months longer than at room temperature. All oils need to be kept cold. The ideal temperature is 65 degrees Fahrenheit, although between 45-65 degrees Fahrenheit is adequate.

Purchasing unadulterated, organic essential oils from reputable manufacturers helps ensure you are using the purest plant constituents while ensuring ethical and sustainable harvesting methods.

Popular Oils & Their Therapeutic Benefits

Lavender — The most widely used essential oil due to its broad range of properties; antidepressant, decongestant, sedative, promotes calming, relieves headaches and muscle aches, healing for burns. Very safe, non-toxic, non-irritant; can use with children. A few drops on the pillow can help kids go to sleep, but don't overdo it, as it can be stimulating.

Tea tree (Melaleuca alternifolia) — Great for green cleaning products and first aid; antifungal, antiseptic, antimicrobial, anti-inflammatory, decongestant, expectorant, stimulating to the immune system, good for acne; can put directly on the skin. But may cause skin irritation if the oil is older and oxidized.

Peppermint — Found in 1000 BC in Egyptian tombs, widely used; anti-inflammatory, antifungal, circulation stimulant, pain relief, nausea, headaches, digestive upset (settles the stomach, but may have the opposite effect with GERD), because energetically cooling, relieves anger. Strong! Dilute at a maximum of 5 percent or less. Avoid using with children younger than five years old. Contraindicated with cardiac fibrillation and the genetic deficiency G6PD. May interfere with homeopathic remedies.

Frankincense — Extracted from the resin / gum of the Boswellia tree, grown in the Middle East and Africa; antiseptic, wound healing, expectorant, pain-relieving, relaxing to the nervous system, used to enhance spirituality. May cause skin irritation in those with sensitive skin. To be safe, use in low dilution when applying to the skin.

Eucalyptus — Uplifting aroma useful for all respiratory conditions, decongestant inhalant for colds, antiviral, antibacterial; not only eases nasal congestion associated with a cold, it inhibits proliferation of the virus causing the cold; useful as an air spray in the house for protection when other are sick. Relieves pain, muscle aches, and headaches. Non-toxic and non-irritating but should not be used on children younger than 10 years old. Do not apply to or near the face of infants. May interfere with homeopathic remedies, and care must be taken when using with asthmatics. ●

EDITOR'S NOTE: *Malkin is certified as an Integrative Health Coach and Lifestyle Practitioner and is certified through the Institute for the Psychology of Eating.*

CLICK HERE TO READ THE ORIGINAL ARTICLE, INCLUDING REFERENCES.

An integrative framework for prevention and treatment of suicidality

BY JULIE LUZARRAGA, LICSW, DCSW

Your patient presents for his annual wellness exam. He is a relatively healthy Caucasian male in his late 40s. He is married with three children. In the past he has identified his professional life as an executive as a stressor. Physically, he is moderately overweight and has presented with back problems in the past. Religion is important to him and he exercises on a regular basis. Today, he presents with flat affect and shares that his wife has asked for a divorce. He reports difficulty sleeping, racing thoughts, and nausea that is making it difficult for him to eat regularly. He has already made an appointment with a mental health provider in your clinic.

> "Alongside the concept of treatment, the broader concepts of health promotion and the prevention of illness are paramount"

Would you ask him if he has had thoughts of suicide?

According to the Centers for Disease Control and Prevention, there were 44,965 reported suicides in the United States in 2016; a 30 percent increase since 1999. The Substance Abuse and Mental Health Services Administration reports one person will die from suicide every 12 minutes in the United States. This concerning increase has created a call to develop more effective approaches to prevention and treatment of suicidality. The defining principles of integrative healthcare provide a framework for the treatment and assessment of suicidality for integrative practitioners.

The University of Arizona Center for Integrative Medicine (AZCIM) states "alongside the concept of treatment, the broader concepts of health promotion and the prevention of illness are paramount". Additionally, it provides a framework for assessing and treating suicidality in the integrative setting.

These principles include:

- A focus on the therapeutic relationship between provider and patient
- Attention to all aspects of a person's health
- The use of evidence-based approaches provide a framework for assessing and treating suicidality in our patients

Prevention and treatment start with an integrative approach to assessment which includes "all factors that influence health, wellness, and disease . . . including mind, spirit, and community, as well as the body," according to the AZCIM.

Many integrative practitioners believe better assessment and treatment happen when we inquire about all aspects of a patient's life.

"In addition to validated assessment tools, simply asking patients the question, 'within the last two weeks, have you had thoughts of killing yourself, or that you would be better off dead?' can identify at-risk patients."

With the increase in suicides and the number of people who experience suicidal ideation, questions and conversation about suicidality should always be a part of our integrative assessment.

It is easy to assume that a patient has not or will not have thoughts of ending their life. However, in 2013, an estimated 9.3 million adults aged 18 or older had serious thoughts of suicide in the past year. Whether we are aware of it or not, health providers encounter patients with suicidality on a regular basis. This is true for both mental health providers and primary care providers.

A 2002 review by Jason Luoma, MA, and colleagues showed that45 percent of patients who commit suicide had seen primary care within one month of suicide and 20 percent had contact with a mental health provider. In an integrative setting where patients are being seen for chronic health conditions, there is an even greater need for ongoing assessment of suicidality. There is evidence that depression occurs more frequently in patients with physical disorders, according to Hee-Ju Kang, MD. Many patients seen in an integrative care setting experience both physical and emotional distress, which makes them more at-risk.

Understanding the prevalence of suicidality and the importance of assessment is the first step in prevention and treatment. The next step is ensuring integrative practitioners develop a comfort level with fostering the patient-provider relationship in assessments through asking the tough questions.

In a 2011 analysis of primary care physicians, Steven Vannoy, MD and Lynne Robins, MD, found that suicide-related discussion occurred in only 11 percent of encounters despite finding 59 percent of the patients endorsed suicidal ideation. Providers, including integrative practitioners, need to develop a comfort level in asking patients about suicide.

One way to assist with these conversations is to utilize assessment tools. The U.S. Preventive Services Task Force and National Action Alliance for Suicide Prevention recommend primary care providers screen adolescents and adults for depression. The National Action Alliance for Suicide Prevention provides examples of screening tools that can be used in the clinic setting.

In addition to validated assessment tools, simply asking patients the question, "within the last two weeks, have you had thoughts of killing yourself, or that you would be better off dead?" can identify at-risk patients.

Becoming comfortable with asking these questions is important. A patient is less likely to honestly respond when the questions are clunky or rote. They are also less likely to respond if a provider is obviously uncomfortable with the subject. Vannoy and Robins found providers were likely to use language indicating a preference for the patient to deny suicidality and that they were more likely to show engaging communication style when a patient denied suicidality. Integrative mental health practitioners can also be utilized for both assessing patients and coaching other integrative practitioners in assessment and how to ask patients about suicidality. For more information, the Suicide Prevention Resource Center has developed tools and guides specific to primary care providers which can be adapted for any integrative practitioner.

Properly assessing suicidality includes being familiar with the risk and protective factors related to suicide. Eric Caine, MD, and his colleagues found one of the barriers to effective suicide prevention is the inability to discriminate between those who are truly at risk and those who may seem at risk due to a pre-existing psychological disorder. Many of these patients will be diagnosed with depression or another mental illness. The U.S. Preventive Services Task Force reports about 87 percent of patients who die by suicide meet the criteria for one or more major mental illness. We cannot assume suicidality is present in only depressed patients. Not all patients will have been diagnosed or meet the full criteria for a major mental disorder. Knowing the risk factors can help guide integrative practitioners in conducting a thorough assessment with questions important to understanding a patient's risk for suicidality.

The Suicide Prevention and Risk Center provides a list of risk and protective factors providers can utilize when assessing patients. Some of the risks are:

- Prior suicide attempt(s)
- Access to lethal means
- Knowing someone who has died by suicide
- Chronic disease
- Social isolation
- Experience of discrimination

It is also important to know population risk. For example, men between the ages of 50 and 54 years old have shown the greatest increase in suicide rate, according to the. They are also unlikely to be asked or disclose suicidal ideation, said Vannoy and Robins.

In addition, change in life circumstances such as relationship problems, life stressors, and a recent or impending crisis can be risk factors, says Gregory Simon, MD. Asking patients about their relationships, stress level, and other areas of life improve the assessment process. The integrative approach of making the patient-provider relationship paramount to assess all aspects of one's health is the foundation of assessment and prevention of suicidality.

Building on the foundation of the patient-provider relationship and integrative assessment of risk, treating suicidality requires an integrative approach to care that is both evidence-based and collaborative.

Multiple psychosocial therapies including cognitive behavioral therapy and psychodynamic interpersonal therapy are evidence-based approaches for suicide prevention, which Gregory Brown, PhD and Shari Jager-Hyman, PhD found in their review published in 2014. While referrals to licensed mental health providers and psychiatric providers will be beneficial to patients, integrative practitioners can provide an even higher level of intervention by collaboratively working together in treating the patient.

In 2002, Jurgen Unutzer, MD. and colleagues randomly assigned 1,801 patients to either traditional primary care for depression or the Improving Mood Promoting Access to Collaborative Treatment (IMPACT) model of collaborative care. Traditional primary care includes medication prescribed by the primary care provider and/or referral to a behavioral health specialist. The IMPACT model consists of a care manager, primary care provider and a psychiatrist. The IMPACT team provided education and support for 12 months. At 12 months, the team found 45 percent of patients receiving the collaborative approach had a 50 percent or greater reduction in depressive symptoms from baseline compared with 19 percent of usual care participants. The collaborative care approach is what integrative practitioners use with other health conditions and should be utilized with patients at risk for suicide. With evidence-based therapies in place, the integrative team can also work with the patient on adding complementary therapies such as supplements, exercise and light therapy to mitigate depressive symptoms.

Integrative practitioners put the patient and the relationship with the patient in the forefront of their approach to assessment and treatment. Assessment is ongoing and takes all aspects of a person's health and wellness into consideration, including asking questions about stress level, relationships, and any other significant events. A person's experience of suicidality is a crucial component of their overall health and wellness. Utilizing these principles, integrative practitioners are uniquely positioned to increase their skills in assessing and treating patients experiencing suicidal ideation. The integrative approach to treatment uses the evidence-based approaches in collaboration with other professionals creating a holding space for patients exhibiting suicidal ideation. The integrative approach provides an existing framework for assessment and treatment of suicidality has the potential to make a significant impact on the prevention of suicide. ●

EDITOR'S NOTE: *Luzarraga is a psychotherapist and founder of Omaha Integrative Care in Nebraska.*

CLICK HERE TO READ THE ORIGINAL ARTICLE WITH REFERENCES.

Bitters:
A secret weapon for better digestion

BY LISA AKERS, HERBALIST

Digestive health has been a focus in the integrative healthcare community for a while now. Practitioners look closely at the digestive system, as it is the foundation for proper function in every body system. When the digestive system is out of balance or operating inefficiently, symptoms such as fatigue, pain, weight gain, nutrient deficiency, and bloating or gas can drive patients in search of a solution. These vague symptoms can be difficult to treat because they are common complaints that can have many origins.

Untangling these symptoms can be a challenge, but improving digestive function benefits everyone, and it might be enough to resolve the symptoms and get that person back on the track to radiant health. Integrative practitioners look to resolve the cause rather than mask the symptom, and bitter foods are a natural way to boost the body's own digestive processes instead of supplementing with manufactured enzymes and supplements.

Bitter plants have been traditionally made into a concoction referred to as "bitters" or "herbal bitters." These formulas are commonly extracted in alcohol of some sort, to ensure the key constituents are captured in the tonic. While traditionally found in a bartender's pantry, more people are bringing bitters to cooking, medicinal use, and non-alcoholic beverages. Bitters are a trendy addition to urban bar scenes and an essential remedy in every herbalist's apothecary.

The most common plants used in bitters are some of the most maligned weeds. Plants like dandelion, burdock, chicory, and angelica are typical ingredients in bitters recipes. More beloved bitter plants have been adapted into our daily routine with coffee, cocoa, beer, and tea. These plants contain polyphenols, flavonoids, alkaloids, and terpenes, among other constituents.

To taste bitter plants, we use the TAS2R family of taste receptors. These taste receptors are found not only in the mouth, but also all along the digestive tract, and recently discovered in the lungs. Recent research, such as this study published in May 2012, suggests that the bitter taste receptors evolved as a protective mechanism to stimulate clearing functions when exposed to toxins. The bitter taste discouraged humans from eating the plants, and the subsequent digestive stimulation helped to move any dangerous material through the system as quickly as possible.

Alkaloids are frequently implicated in poisons and in bitter tasting herbs. It is possibly the high alkaloid content that caused human taste receptors to evolve to identify and respond to bitter flavors. While many alkaloid forms are safe for ingestion, high levels of pyrrolizidine alkaloids are the foundational reason why some herbs like comfrey, agrimony, and coltsfoot, which are traditional herbal remedies are currently discouraged from internal use. These alkaloids accumulate

in the body and can cause permanent damage to liver and kidney tissue. Fortunately, these herbs and plants are known and avoided in bitters formulas created by herbalists and manufacturers.

Bitter plant constituents aren't all bad. Our bodies evolved to take advantage of bitter flavors as a signal for the body to ramp up the digestive process. When the tongue tastes something bitter, it signals to the digestive tract to ramp up production of digestive enzymes from the saliva through the small intestine. Bile is produced and released into the digestive tract, stomach acid increases, and peristalsis is stimulated. All this boosted digestive activity leads to a more complete and thorough processing of food, meaning more nutrients are released from the food and any remaining undigested food is moved out more quickly, reducing exposure to potential toxins.

Over time, the regular use of bitters increases insulin sensitivity, helping to reduce blood sugar levels and the risk of lifestyle diseases like type II diabetes and metabolic syndrome. Bitters use helps to heal the gut walls and reduce or eliminate symptoms of leaky gut and irritable bowel syndrome. Bitter plants aid the liver's detoxification processes and can inhibit cholesterol production and reduce sugar cravings. Bitters can prevent heartburn or indigestion after a questionable meal, and can even help reduce the symptoms for people with food sensitivities when dining out. Instead of taking digestive enzymes, bitters naturally stimulates healthy and robust digestion using the full spectrum of digestive enzymes and secretions.

Bitters are a seemingly magical digestive and overall health booster. For many, the addition of bitters either through food or prepared tonics is a life-changer. Some people, however, should be cautious about adding bitters to their diet. People who struggle with kidney or gallstones should avoid the stimulating effects of bitters, which could exacerbate their condition. Pregnant and nursing women should avoid bitters, as they can stimulate uterine contractions and transfer through breastmilk. A physician familiar with herbal remedies or an herbalist can provide information about herb-drug interactions or contraindications for specific health conditions.

Stepping beyond the familiar bottle of Angostura Bitters, this fabulous flavor can be found in foods like arugula, dandelion, grapefruit, artichoke, kale, cranberries, ginger, black pepper, and cardamom. Coffee, beer, and teas all contain bitter tannins that work in the same way to boost digestion, support the liver, and encourage robust health. Some herbal companies are making boutique bitter blends with popular flavors like maple, curry, and chamomile. Cookbooks for food and beverages with bitters and for making your own bitters are appearing, too. A quick search of Pinterest yields dozens of do-it-yourself recipes that are easy to make from readily available ingredients.

Bitters are most effective when taken about 30 minutes prior to a meal, but any time is better than not at all. Bitters can be taken between meals to help with food or sugar cravings, or after a meal when indigestion threatens. As a tonic, bitters can be dropped directly onto the tongue or mixed with a beverage. Bitter foods like parsley, kale, and radicchio serve the same function as the tonic when eaten as a pre-meal salad and have the added benefit of nutrients and fiber.

The modern diet has substituted processed, sweetened foods for these traditional bitters, so these foods can be difficult to add to a patient's diet. Foods are often easiest to add. A bitter green salad with oil and vinegar or a small glass of sparkling water with a bitter tonic or even unsweetened cranberry juice splashed in sparkling water are easy additions to a reluctant patient's diet. Once someone starts to enjoy bitter flavors, they'll naturally shift away from sweeter foods, which have far reaching benefits.

Summer is a great time to introduce bitters, as ice-cold fizzy beverages are popular offerings at events and gatherings. A dropper-full of bitters in a glass of tonic water or club soda is a refreshing way to cool off on a hot day, and it has long-lasting health benefits. Developing a taste for bitters now will pay off when the cooler weather returns and we're shifting from the abundant fresh produce to richer, carb-filled foods and preserved meats. ●

EDITOR'S NOTE: *Akers is an herbalist and spaceship builder.*

CLICK HERE TO READ THE ORIGINAL ARTICLE.

How to support your gut flora

BY ROBERT SILVERMAN, DC, MS, CNS, CSCS, CKTP, CES, CIISN, DACBN, HKC, SASTM

The bacteria that live in your gut are key to your good health. You want to encourage the beneficial ones and crowd out the harmful ones. How exactly can you do that? A healthy diet with minimal sugar and processed foods encourages the good bacteria; so, do probiotic supplements. But just as important—possibly more so—is eating foods high in insoluble fiber. That means eating a diet high in plant-based foods.

> "Insoluble fiber turns out to be more digestible than we thought. It still mostly passes through you unchanged, but it has another key role in your body: It's food for your beneficial bacteria."

Fiber is usually defined as the parts of plant foods that can't be digested by the human digestive tract. Its usually broken down into two categories: soluble fiber and insoluble fiber. Soluble fiber attracts water and turns into a soft gel during digestion. Soluble fiber is found in beans, lentils, peas, barley, oatmeal, nuts, seeds, and some fruits (apples and peaches, for example).

Insoluble fiber is made up mostly of tough plant cell walls that don't absorb water. It's found in whole grains, nuts, and fruits and vegetables. We generally think of insoluble fiber as the plant material that adds bulk to the stool and helps to keep food moving through the digestive tract. Because you don't digest it, insoluble fiber doesn't add any calories to your intake.

Insoluble fiber turns out to be more digestible than we thought. It still mostly passes through you unchanged, but it has another key role in your body: It's food for your beneficial bacteria.

Insoluble Fiber for a Health Gut

Insoluble fiber in your gut is like fertilizer for your beneficial bacteria. Here's how it works:

When the trillions of bacteria in your gut encounter insoluble fiber from your diet, they get to work fermenting it. That means they use metabolic processes to convert the carbohydrates in the fiber into short-chain fatty acids (SCFAs), mostly butyrate, propionate, and acetate.

SCFAs impact your health in several important ways. In the gut, they help form a strong barrier and prevent leaky gut syndrome. They also inhibit the growth of some unfriendly bacteria. SCFAs could also protect you against intestinal inflammation and colorectal cancer through their effects on your immune system. It's also possible that SCFAs play a role in appetite regulation and how your body produces energy.

Most importantly, SCFAs are fuel for beneficial bacteria. If your diet is high in insoluble fiber, you're giving your beneficial bacteria the environment they like best.

Prebiotics in Food

When you want to improve your intestinal flora, a better diet and taking probiotics are important first steps. To get the most benefit from both, however, you also need to add more insoluble fiber to help the probiotic bacteria get established. Prebiotics, as this type of fiber is also known, act as food for the beneficial gut bacteria and stimulate their growth.

To be most effective, a prebiotic need to be insoluble fiber that resists digestion in the stomach and small intestine and reaches the bacteria of the colon largely unchanged.

Prebiotic supplements are available, but the best way to feed your bacteria is simply to eat foods that are high in insoluble fiber. The more fiber you eat, the more SCFAs you produce. The source of the insoluble fiber doesn't seem to matter as much as the quantity.

According to the National Academy of Sciences, the standard recommendation for dietary fiber is 30 to 38 grams a day for men and 25 grams a day for women. Another way of looking at this is getting 14 grams of fiber for every thousand calories in your diet. In practice, few people achieve the recommended amounts. The median fiber intake for men is actually only 16 to 18 grams a day; for women, it's only 12 to 15 grams a day.

Many experts now feel the recommended fiber amounts are too low. They recommend 50 grams a day. That might seem like a lot of fiber to consume, but in a diet that's largely plant-based, it's not hard to achieve. Following the Mediterranean diet, for example, will give most people at least the recommended amounts and probably more due to the emphasis on fruits, vegetables, and beans and the relatively low intake of red meat and dairy foods.

Foods that are high in oligosaccharides (simple carbohydrates) are particularly good as prebiotics. They're found naturally in a lot of plant foods, including almonds, asparagus, avocado, barley, berries, cabbage, cherries, chia seeds, chickpeas, coconut, garlic, greens, Jerusalem artichoke, lentils, onions, peaches, pistachios, and walnuts.

Prebiotic Supplements

Eating your prebiotics is always a good idea—aside from the prebiotic benefit, foods high in oligosaccharides are also high in other valuable nutrients, like omega-3 fatty acids and B vitamins. But sometimes your gut flora need more prebiotics than you can comfortably eat. Supplements can be very helpful.

Prebiotic supplements that contain maltose in the form of isomalto-oligosaccharides (IMOs) are a good choice. This form is found naturally in barley, whole grains, miso, soy sauce, and starchy vegetables. Other oligosaccharides, such as inulin (found in chicory root), acacia, and marshmallow are also used in prebiotic supplements. Unpasteurized apple cider vinegar is also sometimes recommended as a prebiotic.

By eating a diet that's higher in plants and lower in processed foods, meat, and dairy foods you can restore and maintain your gut bacteria in a way that's simple, drug-free, and delicious. ●

EDITOR'S NOTE: *Silverman is an internationally-known speaker and author with a full-time private practice in White Plains, New York, where he specializes in the treatment of joint pain with innovative, science-based, nonsurgical approaches, and functional nutrition.*

CLICK HERE TO READ THE ORIGINAL ARTICLE.

Q&A

"There is nothing more heartening than a patient making strides in their health. There are many times that this is a significant positive change in their health. But, I almost find it more meaningful when a patient's health improves slightly, but their quality of life and experience of their health changes significantly."

PRACTITIONER SPOTLIGHT:

Integrative business owner and social worker emphasizes self-compassion

Julie Luzarraga, LICSW, DCSW is a clinical social worker and founder of Omaha Integrative Care, the only integrative healthcare clinic in Nebraska. She splits her time between strategic planning and leadership development, seeing patients, and consulting with other organizations on incorporating integrative services.

When she's not running a practice or helping others, Luzarraga enjoys gardening, being in nature, reading, yoga, golf, and running—she's even completed the Boston Marathon. Luzarraga and her husband, Tom, have two children, Isabella, 15 years old, and Javier, 12 years old.

INTEGRATIVE PRACTITIONER: **What did you do before entering integrative medicine?**

LUZARRAGA: I have been a clinical social worker for over 20 years. My work as a social worker started in Connecticut where I worked primarily with children and families impacted by trauma. This was the start of my work as an integrative practitioner. Research in trauma and its impact on brain development was beginning to integrate both mind and body. At the same time, I became a regular yoga practitioner and experienced for myself the physical and psychological benefit of complementary practices. From there, I entered into private practice and continued my own personal studies in mind-body medicine, yoga, mindfulness and other areas that complemented my practice and work with patients.

INTEGRATIVE PRACTITIONER: **Why did you get into this line of work?**

LUZARRAGA: During my leadership work at Duke's Leadership Program in Integrative Healthcare, I realized that my professional path was greatly influenced by my father's career as a surgeon in two ways. Growing up, I was aware of not only his skill in healing surgically, but in the relationships that he created with his patients. To this day, there are people who comment to me what a great surgeon he is. This does not come from his surgical skills, but his ability to develop a relationship with his patients. This always struck me.

From another perspective, I also saw in him what our healthcare system was lacking. He worked long hours, was frequently unavailable for his own self-care and family, and knew nothing about incorporating a patient's resources. He was a great surgeon and could develop relationships but had no opportunity to help patients find their own healing capacities. I realized in my leadership work that filling in those gaps was what led me to social work and the integration of physical and emotional has been a natural integration of my respect for western medicine and appreciation of how complementary therapies can just enhance healing.

INTEGRATIVE PRACTITIONER: **What has been your biggest challenge?**

LUZARRAGA: Living and practicing in the Midwest, my biggest challenge has been educating the community, both professional and general. Sometimes it feels like educating the professional community is harder than the general community.

INTEGRATIVE PRACTITIONER: **What has been your biggest reward?**

LUZARRAGA: My biggest reward is twofold. First, it is seeing the patients succeed and their gratitude for the practice of integrative healthcare. There is nothing more heartening than a patient making strides in their health. There are many times that this is a significant positive change in their health. But, I almost find it more meaningful when a patient's health improves slightly, but their quality of life and experience of their health changes significantly. I also love how our patients feel part of a community. I have one patient who calls our office a "sanctuary" and others who say it is like a "home" to them. The second biggest reward is seeing how the practice of integrative healthcare influences our providers and staff. I am a firm believer that if you are going to provide integrative healthcare services to patients, you must practice an integrative business model. The quadruple aim of improved provider experience is imperative to a successful integrative practice. I have seen our staff and providers grow professionally and personally. It may be losing weight, going through a major life change, taking on new professional goals, or any number of feats. At our practice, we believe our staff and providers deserve the integrative approach we bring to patients and that has created a whole lot of safety and space for people to get healthy.

INTEGRATIVE PRACTITIONER: **How has the field changed since you began working in integrative medicine?**

LUZARRAGA: When I first started, the catchphrase was "mind-body medicine." It was "alternative" and had limited research and very limited support for leaders. Now, we are seeing more opportunities for growth and development for providers and leaders in the field. The research is growing with the identity of integrative healthcare.

INTEGRATIVE PRACTITIONER: **Can you mention a few favorite bits of information you've received from colleagues through IntegrativePractitioner.com or the Integrative Healthcare Symposium?**

LUZARRAGA: I attended my first Integrative Healthcare Symposium in 2017. I had recently completed my Leadership Program in Integrative Healthcare and was eager to continue to learn and grow. I remember being heartened listening to physicians talk about meditation and how they incorporate meditation and breathing practices into their exams. I was struck by the stories some of the physicians shared about their reluctance to understand mindfulness and then how they became regular practitioners.

INTEGRATIVE PRACTITIONER: **What piece of advice do you have for someone new to integrative medicine?**

LUZARRAGA: Find a mentor. The field is so expansive it is important to have some support and guidance in how you navigate the opportunities.

INTEGRATIVE PRACTITIONER: **If you could have any other job, what would it be?**

LUZARRAGA: I have always wanted to write more so being a writer is appealing to me.

INTEGRATIVE PRACTITIONER: **What was your first job (what you did in high school)?**

LUZARRAGA: Ha! I worked at TCBY in high school. I've never eaten so many cut up peanut butter cups in my life. That may have bene the start of my interest in integrative healthcare.

INTEGRATIVE PRACTITIONER: **What is your favorite self-care or wellness tip?**

LUZARRAGA: The practice of self-compassion. I have been practicing mindfulness and meditation for almost 20 years and amazingly have only recently begun to incorporate self-compassion. I am very interested in how we mitigate burnout and compassion fatigue as care providers and self-compassion is an amazing tool for this. ●

Editor's Note: *Want to be our next Practitioner Spotlight? E-mail editor Katherine Rushlau at krushlau@divcom.com for more information.*

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