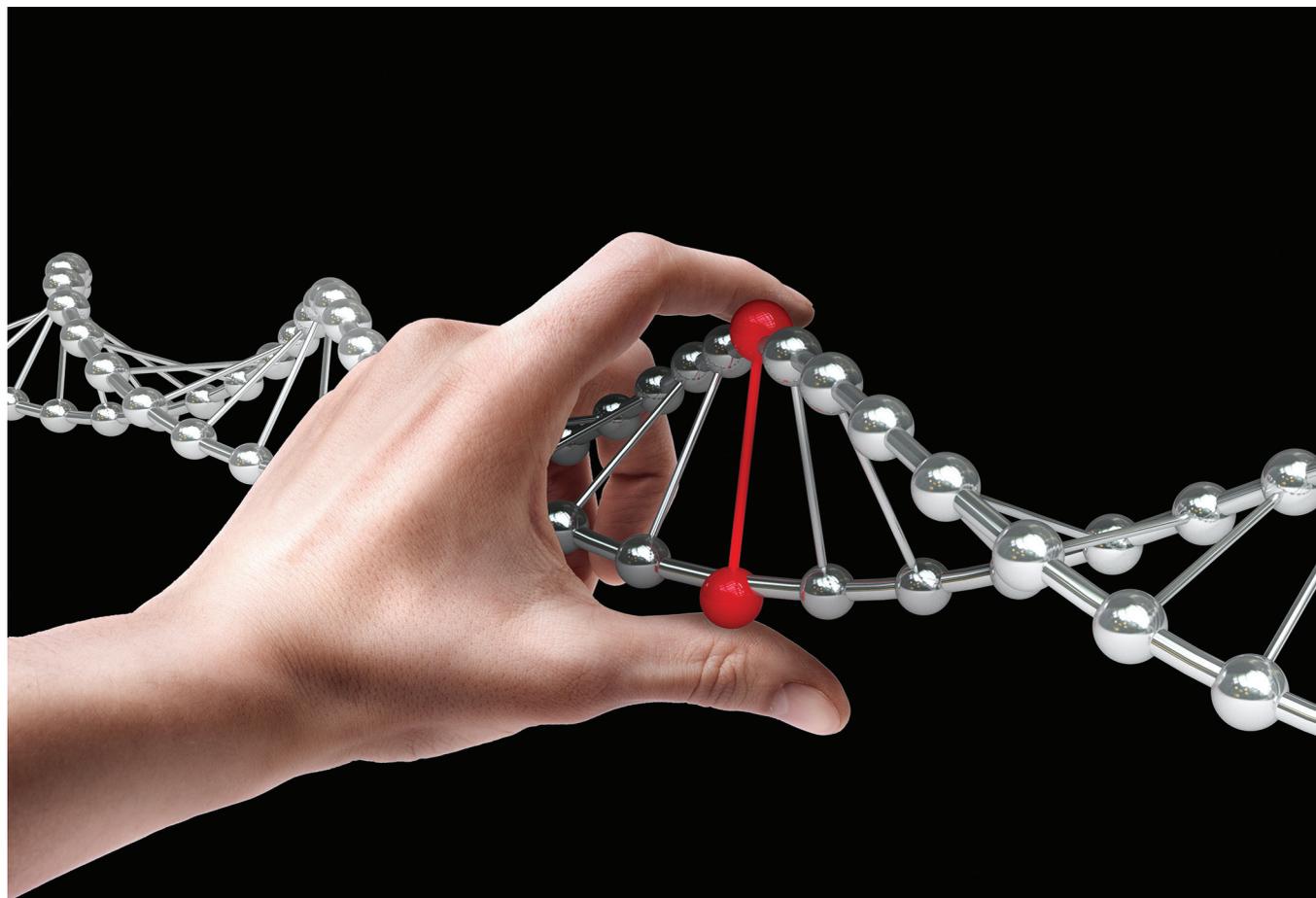


Price-Pottenger®

Journal of Health and Healing

VOLUME 37 / NUMBER 3

FALL 2013



SPECIAL FEATURE

Healing Mental and Behavioral Disorders:
Dr. William J. Walsh on Epigenetics and Nutrient Therapy

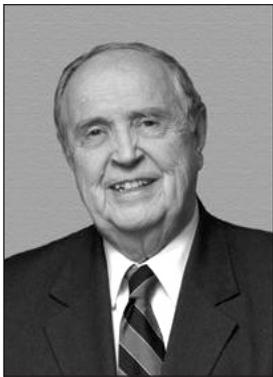
Also: A Natural Approach to UTIs • Holiday Gift Guide

"Life in all its fullness is Mother Nature obeyed." —Weston A. Price, DDS

Treating Mental and Behavioral Disorders with Nutrient Therapy

An Interview with William J. Walsh, PhD

by Jennifer Handy, PhD



After many decades of research that has focused primarily on genetics, the developing field of epigenetics has broadened the focus to include the role of environment. While genetics pertains to the study of DNA sequence, epigenetics is “the study of heritable patterns of gene expression that are not

caused by changes in DNA sequence.”^{1(p1-2)} Although a person’s DNA sequence does not change throughout life, the expression of genes must change in order for cells to develop into different organs and tissues. Undesirable epigenetic changes—from environmental insults such as radiation, poor nutrition, and toxins—can lead to disease. People are most vulnerable to these insults during times of growth and development, such as conception, pregnancy, infancy, and puberty. Many diseases, including cancer,^{2,3,4} diabetes,⁵ and degenerative conditions,⁶ as well as many mental, behavioral,⁷ and developmental⁸ disorders, are now believed to be epigenetic in nature.

Although the discipline of epigenetics is new, many of its key insights are not. Weston A. Price, DDS, for example, found that good prenatal nutrition generally produced normal dental arches in children, while poor nutrition resulted in significantly higher rates of abnormal dental arches.⁹ This connection between nutrition and physical abnormality illustrates the

effect of an epigenetic change, not a genetic one. Price also found that good nutrition is linked not only to physical health and immunity to dental caries but to mental well-being. The people he found living on traditional diets were happy and emotionally stable, and their societies had very little or no crime. Price’s work with nutrition and juvenile delinquency is less well known than his work on dental health, but it too reveals an understanding of epigenetic principles. He discovered that many juvenile delinquents have very poor diets, and he suggested that nutritional deficiencies are a contributing factor to behavioral problems.^{10,11}

William J. Walsh, PhD, is a contemporary researcher who has been actively exploring the connection between nutrient imbalances and criminality for over 30 years. Dr. Walsh is an internationally recognized expert in nutritional medicine and a pioneer in the evolving field of epigenetics. He has developed an innovative method of treating behavioral and mental disorders (such as autism, depression, schizophrenia, and ADHD) that are often resistant to conventional medical protocols. After working with over 30,000 patients—including many convicted felons with severe behavioral disorders—he has been able to identify specific chemical imbalances that cause emotional and mental problems, and correct these imbalances using nutrients instead of drugs. He is the President of the Walsh Research Institute, where he is currently involved in an international training program for physicians and other health care profes-

sionals. His recent book *Nutrient Power* [available from PPNF] presents the results of several decades of research. In the following interview, Dr. Walsh explains how epigenetic errors can cause mental illness and criminal behavior and discusses his methods of treatment.

• • •

JH: Dr. Walsh, please tell us about your background.

WW: My background is in science. As a young man, I worked for a number of scientific organizations, including the Institute for Atomic Research and Los Alamos Scientific Lab. When I got my PhD in chemical engineering and started working at Argonne National Laboratory as a volunteer back in the 1970s, I decided I wanted to do something in the field of crime and violence. So, I volunteered at Statesville Penitentiary in Illinois, and before I knew it, I had a group of about 125 volunteers working with me. In 1983, I was named Prison Volunteer of the Year in Metropolitan Chicago by United Way. However, my education really began when we launched an ex-offender program. The best time to help ex-offenders is when they are getting out of prison, because many of them are hungry and homeless, and people are afraid to give them jobs. This is a danger to society because most of them know how to make money fast through criminal activity.

I started to meet families that had produced a criminal, and I learned that many people who did terrible things came from very good homes. In talking to the parents, especially the mothers, I kept hearing the same story: that they knew these children were very different from the age of two or three. Several of them, at that age, had tortured or even murdered the family pet. Many, however, had siblings who had turned out just fine. Like everybody else back then, I thought that violent behavior was caused by traumatic experiences, bad parenting, and things like that; I didn't understand the cause of behavioral disorders. To gain a better understanding of the issues involved, we started going into the libraries at Argonne and studying human behavior, neurotransmitters, brain function, and so forth.

In the late 1970s, I happened to run into Dr. Carl Pfeiffer, who at that time was regarded as the world's number one nutritional scientist. He had a large clinic in Princeton, New Jersey, and was famous for identifying the three primary biotypes of schizophrenia. The day I met him, it had just been announced that he had been nominated for a Nobel Prize, which he did not get. He became interested in my work, and I collaborated with him for 12 years. I would bring him ex-convicts straight out of prison, we would analyze their biochemistry, and he would develop treatment programs for them. That's how we got started.

After a few years of involvement with treatment—which is not in accordance with the goals and mission of Argonne—I started a non-profit public charity called the Health Research Institute. In 1986, I quit my job and devoted myself to it full-time. My colleagues and I founded the Pfeiffer Treatment Center in 1989, and it became the world's largest clinic of its kind. We eventually saw 30,000 patients. I left there five years ago to launch an international training program to teach doctors how to treat behavioral and mental disorders using nutrient therapy.

I had started out focusing strictly on behavior, but while we were working with violent children—correcting their biochemistry with Pfeiffer's nutrient therapies—many parents reported their children's ADHD or their learning problems had disappeared. By the mid-1980s, we had expanded our programs to include both learning and behavior disorders. Soon after we started the clinic, we saw a few autistic children who, according to their families, became dramatically better after we corrected some of their biochemical problems. By now, I think I have seen more autistic children than anyone in the world—6,500, the last time we counted. I think we have the world's largest chemistry databases for behavior disorders, autism, and depression. We have millions of lab results for blood, urine, and tissues, and these have guided all of the work we have done.

JH: Your work involves an understanding of epigenetics. Can you please explain what that is?

WW: Unlike genetics, which involves a change in DNA sequence, epigenetics involves changes in gene

expression. In embryology, epigenetic imprinting begins about day 20 in the womb, when the cells of the fetus start to differentiate into various tissues and organs. There are about 23,000 genes in the human body, and each has only one job, which is to make a specific protein. Some of these proteins are enzymes and other molecules that are vital to life. Every cell in your body has identical DNA, but you need different chemicals in different parts of your body. Between days 18 to 22 in the womb, epigenetics starts to take over. Chemical tags are put on parts of the DNA to regulate the genes, and these tags determine whether a gene is turned on or off, or the rate at which a particular protein is made. Without epigenetics, a fetus would just be a big blob of identical cells.

Epigenetics is a natural phenomenon, but the process can go wrong. Epigenetic deviations or disorders can sometimes be heritable, but they are primarily caused by environmental insults. One famous example of an environmental insult was thalidomide, which was prescribed as a popular anti-nausea drug for pregnant women back in the 60s and 70s. To everyone's horror around the world, many children were born terribly deformed, some without fingers or arms. The medication had caused abnormal bookmarks—marks that are placed on different parts of the DNA. Methyl marks tend to turn off a gene, whereas acetyl marks increase gene expression and production of the particular protein.

We are now learning that many diseases we thought were genetic are actually epigenetic. Most forms of cancer are epigenetic, as are many types of heart disease. For example, if a person is out in the sun too much, the cumulative environmental insult from the sun on their skin can change one of these bookmarks, which may turn on a cancer gene or turn off a cancer-protective gene.

In the last five years, it's also become clear to me that most types of mental illness are epigenetic. Unlike changes in DNA sequence, which often take centuries to manifest, epigenetic disorders involve a sudden, radical change in functioning, such as the characteristic rapid onset of schizophrenia. I have seen hundreds of young men and women who were doing well in life, and then, in just a week or two,

they had a mental breakdown and were diagnosed with schizophrenia. An epigenetic condition such as this typically does not go away. The environmental insults that trigger the illness produce deviant epigenetic marks that survive cell division, so the disorder can persist for the rest of a person's life.

Another example is regressive autism. I have talked to more than 5,000 families whose children were developing normally—learning to talk, singing, and charming their grandparents. Then, over a very short time period, there was a shocking change in behavior. Many such children lose all speech, develop sensitivities to food, behave differently, and isolate themselves from the family. That's a classic example of epigenetic change. There has been an environmental insult that changed gene expression.

There has been a lot of confusion because many epigenetic diseases, such as autism, run in families. If one identical twin is diagnosed with autism, it's more than 60 percent likely the other one will be as well. With fraternal twins, who have different DNA, that likelihood is less than ten percent. Many disorders that run in families violate the classic Mendelian laws of genetics. That has been puzzling scientists for a long time. The answer is that these disorders are epigenetic and not genetic.

JH: What can cause an epigenetic change?

WW: There are two things that can go wrong. The first is the initial setting up of a person's bookmarks, which happens very early in the fetus's development. That process can be affected by nuclear radiation, certain medications (such as thalidomide), toxic chemicals, or nutrient deficiencies in the womb (such as folate deficiency). An abnormal chemical environment in the womb can cause an epigenetic disorder.

The second type of epigenetic change happens after the child is born. Environmental insults later in life can cause either deviant gene expression or a change in the regulation of genes, which affects the amount of proteins that are delivered to various tissues. The result could be a disorder. One example is paranoid schizophrenia. I'm quite certain that most cases of schizophrenia are epigenetic in nature. Another clas-

sis example is post-traumatic stress. In wartime, if someone experiences a severe emotional trauma, that trauma can change their bookmarks and alter their gene expression. When people get post-traumatic stress disorder, that condition typically becomes a continuing problem for the rest of their lives.

The good news is that it appears epigenetic errors can be treated and, in the future, there will probably be a cure for many of these disorders. Most of the research in epigenetics is in the field of cancer, and there are many encouraging reports of progress. Researchers are able to easily identify a person's genome. They have methods of quickly locating chemical tags and identifying the deviant ones, and they are currently developing methods to correct them.

Even now, we have epigenetic knowledge that is guiding the treatment of people with mental and behavioral disorders through the use of nutrients. For example, we understand that the amino acid methionine (or SAME, the active form of methionine in the body) functions as a serotonin reuptake inhibitor through an epigenetic mechanism. We also know that folates work epigenetically to lower dopamine activity, which can help people who have a certain form of paranoid schizophrenia. This explains why Dr. Abram Hoffer was able to successfully treat schizophrenics in the 1950s with niacin and folic acid. He thought it had to do with a chemical called adrenochrome in the body, but now we know these nutrients epigenetically affect the reuptake of neurotransmitters.

JH: Your research shows that most mental and behavioral disorders are the result of chemical imbalances. Are these genetic or epigenetic?

WW: They can be either. For example, if someone is undermethylated or zinc deficient, that can be a genetic tendency that is passed from parent to child. The beauty of epigenetics is that it shows us how to overcome genetic abnormalities, in many cases. We now understand how, using nutrients, we can increase or decrease the expression of genes. For example, if someone has suicidal depression due to low serotonin activity, they may have too much methyl on certain parts of their DNA, which can cause the DNA

to compress, preventing gene expression. There are nutrient therapies that cause the DNA to open up and unspool, allowing us to adjust gene expression in a way that has never been possible before.

JH: What types of mental and behavioral disorders can be treated successfully with nutrient therapy?

WW: We have done many careful outcome studies and a few double-blind control studies, and we have learned who we can help with nutrient therapy and who we can't. We've had some disappointments. I thought we were good at treating Tourette's syndrome, based on a number of reports from families, until we did an outcome study. When we looked at 100 people who were treated with nutrient therapy, we found that only ten to fifteen percent got better. Fortunately, treatment of many other conditions, including behavior disorders, depression, and schizophrenia results in consistent reports of improvement after nutrient therapy.

Outcome studies for behavior disorders indicate that these are surprisingly easy to correct with nutrient therapy. Violent children are easy to diagnose, and the probability that they will get dramatically better on our treatment appears very high. We only struck out with about ten percent of the behavior cases, according to the families, assuming that they got compliance with the treatment.

Clinical depression is also something we treat routinely. I think the reason we are so successful is our chemical database, which identified the five major biotypes of depression. Depression is not a single disorder, as mainstream psychiatry believes, with all depressed people suffering from reduced activity at their serotonin receptors. According to our database, that's true in about 40 percent of depressives, but not in the others. We have individualized nutrient therapies, determined by the particular chemical imbalances involved. Based on outcome studies, we are roughly 85 percent successful with depression, although that rate varies depending upon the specific type.

We also have great reports on our work with schizophrenia. Carl Pfeiffer worked out therapies for

schizophrenia, and we have basically carried on with the knowledge that he gave us. He discovered individual schizophrenia biochemical types, each with distinctive symptoms and body chemistries, and recommended specific nutrient therapies for each type. For example, he found that histamine deficiency and copper overload were responsible for many cases of classic paranoid schizophrenia with auditory hallucinations. Most of Pfeiffer's findings have held up quite nicely over the past 40 years.

Bipolar disorder is something I have been researching over the last two years. I have become a bit obsessed with what's going on in the brain to cause a manic episode, in which many cells in the brain start firing excessively. Later in the cycle, activity slows down and depression sets in. We believe we are beginning to understand why this whole cycle takes place. Our present success with bipolar disorder is about 65 to 70 percent, not as good as with regular depression. We're still working to find ways to better help people with this condition.

JH: Would you talk more about the five types of depression and your successes in treating them?

WW: The largest group of depressives is the undermethylation biotype, which includes between 38 and 40 percent of all people diagnosed with clinical depression—based on the 3,600 cases we have studied. In many cases, this condition is genetic, not epigenetic. It can be aggravated by the environment, but often these people are born with a tendency for depression. Undermethylation is treatable, but it is the most difficult biotype of depression to treat. It usually takes at least a month for people to feel any better, and often six months for the nutrient therapy to achieve its full effect. Our success rate is probably 65 to 70 percent with this form of depression.

The second group consists of people with hypercopperemia, or copper overload. This group is smaller, around 17 percent of all depressives. The vast majority are women who have hormonal imbalances. During pregnancy, a woman's copper level more than doubles because the fetus needs copper for the rapid creation of blood cells. Soon after birth, her copper and estrogen levels are supposed to return to normal,

but some women don't have the ability to get rid of the excess copper because they are deficient in certain regulating proteins. Elevated copper lowers dopamine levels and greatly increases norepinephrine levels. Dopamine is a feel-good neurotransmitter, while elevated norepinephrine has been associated with anxiety and depression. Many women with a severe overload of copper are prone to postpartum psychosis, which can result in a diagnosis of schizophrenia. This condition can continue for years unless the copper overload is fixed. Women with postpartum depression are probably the easiest patients to treat, even if they have suffered from the disorder for 20 years.

A third biotype is called pyrrole disorder depression. People with this form of depression are born with a biochemical abnormality in the bone marrow and spleen, which causes an excess of a chemical called pyrrole. High levels of pyrrole strip the body of vitamin B6 and can produce a dramatic deficiency of zinc. Vitamin B6 is important in the synthesis of neurotransmitters. The final stage of creating serotonin, for example, requires B6 as a co-factor. Zinc deficiency also leads to low activity at the important N-methyl-D-aspartate (NMDA) receptor system. You could treat pyrrole depression with SSRI antidepressants, but I think it is much more scientific and direct to simply normalize blood levels of B6 and zinc.

The fourth type, which affects about one in five depressives, is the low-folate biotype. People with this chemistry have completely different symptoms than the undermethylated group. For example, those in the undermethylated group tend to have seasonal allergies, such as to ragweed and pollen. Most low-folate depressives don't have seasonal allergies but are plagued by chemical and food sensitivities. They tend to have extraordinary anxiety along with depression, and many of them have panic or anxiety attacks. In most cases, they get dramatically worse if they take SSRIs. I have met many depressed patients who say they have been on six or seven different antidepressants, and every time got worse while they were taking them. Incidentally, it only costs about \$80 to do a lab test to determine whether or not a person is a good candidate for an antidepressant.

The final group—only about five percent of depressives—have a toxic overload. The toxin is usually lead, but sometimes it's mercury or cadmium. I treated one man who had bought a beautiful old house built in the 1800s and spent the whole summer scraping the paint off the walls and repainting. He poisoned himself with the lead-based paint and eventually wound up in a mental hospital. He was suicidal for more than a year, but once the lead was out of his system, he was fine.

JH: Has nutrient therapy also been effective for ADHD?

WW: Nutrient therapy works quite well with ADHD, though it's not quite as successful as with depression. I would estimate the success rate for ADHD to be about 75 to 80 percent, based on the thousands of families that reported back to us.

ADHD is actually a name given to several completely different disorders. The primary characteristic of ADHD is inattention, but psychiatrists have broadened the diagnostic criteria to include three major types: people who are predominantly inattentive, those who are mainly impulsive or hyperactive, and those who exhibit a combination of hyperactivity and inattention. I'm finding that, for some reason, many people with behavior disorders are now being diagnosed with ADHD. When you think of attention deficit disorder, the implication is that there is a problem with learning or attention. I've met perhaps hundreds of bright kids who were doing great in school academically but had bad behavior, so they were diagnosed with ADHD and put on medications. I think the diagnostic criteria are off.

If the problem is hyperactivity alone, it is often just a metal metabolism disorder involving zinc deficiency and copper overload. If there is an element of oppositional defiance, which you often see in ADHD now, that's usually undermethylation. If you have a person with a conduct disorder (which includes extreme behavior problems, such as bullying people and destroying property), the major problem is usually a pyrrole disorder. The smallest group diagnosed with ADHD consists of those with antisocial personality. They are the most troublesome group,

and many end up in the penitentiary. Their signature is a combination of imbalances. Almost all of them are undermethylated, have a pyrrole disorder, and are somewhat hyperglycemic. It's a nasty combination. This was discovered by Carl Pfeiffer, not me.

JH: What kind of work have you done with autism?

WW: In 1999, at the Pfeiffer Treatment Center, we were the first to discover that nearly all autistic children had low metallothionein (MT) levels. MT is a protein, found in the brain, that has a lot to do with regulating metals and protecting against toxics such as mercury and lead. It plays an important role in brain development. When you start life, you have a lot of dense, undeveloped brain cells. Beginning in infancy, the brain has a large number of short, densely packed neurons that have not yet developed. MT is essential to all three phases of early brain development: the pruning of brain cells to make space for others to grow; the growth process; and growth inhibition when the brain cell is fully mature. It seems logical that low MT levels in autism might help explain why autism brains are different, compared to the rest of the population.

I developed an MT-Promotion formulation, which is a combination of 22 nutrients, each of which either increases the genetic expression of MT or the functioning of that protein in the body. I patented this therapy for autism. When we started using it, we had dramatically better results in the huge numbers of autistics we were seeing in our clinic.

About 85 percent of our autism families report significant improvement, although the opportunity for a full recovery depends on the patient's age. It has been quite exciting to see some severely autistic children become leaders in the classroom, go on to college, and have a family. However, I've only seen that happen when we started treatment before the age of four. Autism is a developmental disorder, and if there's no treatment early on, the child's brain develops differently, since the majority of the brain's organization happens in the first few years of life. We can make more progress with a two-year-old autistic child in one month than with a six-year-old in six months.

JH: Can a teenager or an adult with autism benefit from your treatment?

WW: Let me give you one example that surprised us. We put a 17-year-old girl on our MT-Promotion therapy, and her mother said that after six weeks, she began to talk, although she still had severe autism. Whatever their age, we usually can improve an autistic person's behavioral control and make them happier. If there is any element of depression, we usually can successfully treat that as well. Three primary problems in autism are deficits in cognition, speech, and socialization. Of these, the easiest to resolve is usually speech, which is often the first thing that improves with nutrient therapy. Progress in cognition and socialization requires gradual improvements in brain organization, which take longer to achieve.

We've learned that autism is neurodegenerative. Without antioxidant therapies, autistic persons lose brain cells and IQ year by year. Most autistic children are clearly very bright. If you evaluated ten typical 25-year-old autistics who had never received antioxidant treatment, you would find that most of them exhibit some degree of mental retardation. The reason is that autism is a condition of oxidative stress, which can cause rapid death of brain cells. This usually doesn't become evident in autism until after puberty, but then mental functioning can gradually degenerate unless you provide antioxidant supplements. That terrible fate can be completely avoided just with antioxidants. People with Asperger's disorder are an exception, as they usually retain their cognitive abilities throughout life.

JH: Would you discuss your treatment for Alzheimer's disease?

WW: My work with Alzheimer's disease grew out of my work with autism. When I was developing my MT therapy, most of the research data I found on MT was in the field of Alzheimer's. Researchers had found less than one-third the amount of MT in brains of people who died of Alzheimer's, compared with those who died of other causes. This protein is a primary protective agent in the brain, guarding it against oxidative stress, free radicals, and toxics. It has the incredible ability to grab onto things such as

mercury and lead and render them harmless. When I submitted my patent application for MT therapy, I put in a claim for its use with Alzheimer's disease. Eventually, they separated it into two different patents. The autism patent was granted, and the one for Alzheimer's is still being processed.

Back in 1992 or 1993, the mother-in-law of a good friend was diagnosed with Alzheimer's and was fading fast. She no longer remembered her grandchildren, her personality had changed, and she never wanted to go anywhere. My friend asked if we could try out the therapy on her. She was the first Alzheimer's disease patient we ever treated with MT-Promotion therapy. He got back to me a few months later and said, "Bill, I think it's working. She remembers her grandkids. Her memory came back, and she wanted to go shopping." He said she was like her old self in many ways. I couldn't understand how that could be true. When a brain cell dies, you can't bring it back. We tried a few more cases, and we were getting consistent reports of partial improvement of memory, followed by stabilization; they did not continue to deteriorate. This particular woman lived another ten years, and died of something else. We have now treated 150 cases of Alzheimer's, and about 70 percent report the same type of results. We have not yet done a double-blind study, so the treatment is extremely promising, but not proven.

JH: What would cause the depletion of metallothionein in certain people?

WW: This is usually caused by severe oxidative stress. The body's number one protector against oxidative stress is glutathione, which comes from your diet but is available in limited supply. If you have severe oxidative stress and glutathione levels are low, the body genetically expresses MT and a few other antioxidant systems to protect you. Glutathione and MT work hand in hand. You might think of glutathione as the first line of defense, and MT as the body's backup system in case of a really severe problem. MT is the primary factor in the blood-brain barrier that stops toxic metals from entering the brain.

A high-protein diet or supplementation with methionine or SAME can boost glutathione levels, but oral

supplements of glutathione are not very effective. Glutathione is made up of three amino acids, and when it is taken orally, they separate from each other before entering the bloodstream. There are transdermal glutathione creams that I think work quite well. I have been using them for over ten years. However, getting the MT system to work properly is an ideal solution, and a good first step is to normalize zinc levels. Zinc is the primary factor that triggers genetic expression of MT, and most people with low MT have low zinc levels.

JH: Can mental and behavioral disorders be treated using diet?

WW: The key issue here is biochemical individuality, which is genetic in most cases. Some people thrive on a vegetarian diet, while others need a high-protein diet. Some have an inability to process casein and gluten, and a gluten- and dairy-free diet might make a dramatic improvement in them. Five percent of schizophrenics have a severe gluten intolerance. There are actually millions of people in the world today who have a lifetime of debilitating schizophrenia, and they would be fine if they just changed their diet. About 30 percent of the people we see with a serious problem have a tendency for low blood sugar. Alcohol or other quick sugars can dramatically worsen their symptoms, so a high-quality diet is important.

The problem is that most serious conditions, such as suicidal depression, autism, or even severe behavior disorders, cannot usually be fixed with diet alone. You would have to eat a huge amount of specific foods to give you what you need if you were fighting a genetic deficiency. If we did a complete metabolic study of any individual, we would find there were a few important nutrients, out of perhaps 300 major ones, that they were quite deficient in because of genetics. That person might need many times the RDA of those nutrients.

Understanding nutrient overloads also gives insight into the inability of diet to be effective in most cases. One of the biggest surprises I had in clinical studies was that nutrient overloads usually cause more mischief than deficiencies. If a person had an

overload of certain nutrients and took supplements of those nutrients or ate a diet rich in them, it would make that person worse. For example, if you give an undermethylated, low-serotonin depressive person a high-vegetable diet, their condition will worsen. That's why you cannot usually help a person with a serious mental disorder by stuffing them full of vitamins, minerals, and amino acids. Part of what you give them will cause problems, and you will often do more harm than good.

We learned a long time ago that hyperactive children usually get worse when they take multiple vitamins and minerals. Sixty-eight percent of hyperactive children have very high copper, which increases adrenaline levels. If you give them a multivitamin-mineral supplement that contains copper, they will become more hyperactive, in most cases.

For a serious mental disorder, we diagnose the precise chemical imbalance through a good medical history and lab testing, and then design an individualized treatment. We don't give people large doses of anything without reason. Our goal is simply to normalize their blood and brain chemistry.

There are more than 1000 important nutrients, including those taken in through food and those made naturally in the body. Fortunately, only about six or seven of these seem to have a dramatic impact on mental health. I used to be bothered by the fact that the same chemical imbalances kept turning up in different conditions. For example, elevated copper is seen not only in hyperactivity, but in postpartum depression as well. Virtually all autistics and most paranoid schizophrenics also have high copper levels. Other disorders also share the same nutrient imbalances, such as zinc deficiency. It finally dawned on me why. It turns out that each of these nutrient factors is directly involved in either the synthesis or the epigenetic regulation of a neurotransmitter in the brain. That was really good news. If we had to study over 200 possible chemical imbalances and correct whatever we found, designing treatments would be very difficult. Fortunately, we can focus on six or seven nutrients, and by balancing them, we can help most people with mental disorders.

JH: What kinds of testing do you recommend for patients?

WW: If patients had every blood and urine test that would provide valuable information, they probably wouldn't have any money left—or any blood—so we have to prioritize. Because six or seven factors are dominant in most cases, we start off with a panel of tests that is relatively inexpensive, maybe only \$300 or \$400. We have to do additional testing in only about ten percent of the cases. We look for markers of oxidative stress and at the important metals, especially zinc and copper, that impact neurotransmitters. We measure the protein called ceruloplasmin because looking at serum copper and ceruloplasmin jointly reveals a lot about free radicals and oxidative stress. We need to have a marker for methylation, and what we have been using is whole blood histamine. It's imperfect, and eventually there'll be a better marker, but right now, it works quite nicely. We also measure urine pyrroles. That comprises about 80 percent of an initial panel.

JH: What are your thoughts on trying to self-treat depression using supplements such as SAME or St. John's wort?

WW: People with serious mental disorders should not try to treat themselves at home. It's necessary to understand a person's biochemical individuality in order to safely treat them. Let's take SAME and St. John's wort, which you just mentioned. Those are two supplements that increase serotonin activity by inhibiting reuptake, as SSRIs do. You have to keep in mind that there are five completely different types of depression, each of which has different neurotransmitter abnormalities. If you were to give one of these supplements to someone with a folate-deficient type of depression, you could drive them to suicide. If you gave St. John's wort and SAME to 100 depressants, about half of them would say it really helped them, but about 20 percent would say they got dramatically worse. A one-size-fits-all approach generally does not work for mental disorders.

The exception to this is people with very poor diets. A lot of them—about five to ten percent of the people we see—have malabsorption problems, with ineffi-

ciencies in getting dietary nutrients into their bloodstream. Those people usually benefit from a broad supplement of vitamins and minerals. Another exception is older people who just don't take in enough food. They are also great candidates for multiple vitamins and minerals. However, people with serious mental conditions usually cannot help themselves with vitamins and minerals. In fact, they may make themselves worse.

JH: Can nutrient therapy completely replace medication in the treatment of mental illness?

WW: This depends on the specific mental illness. Most of the patients we've seen with behavior disorders, ADHD, and depression are already on medication, and we have learned the hard way not to take it away in the beginning. We insist they stay on their medication for three to five months until the nutrient therapy has had its full effect. Then, if the patient has improved significantly—which usually happens—we suggest they go back to their psychiatrist and cautiously try reducing the medication until the optimal dose is found. Around 80 percent of these patients tell us they are at their best with no medication, but 20 percent say they feel like they've lost something if they go all the way to zero. We're not entirely against medication. We just want the patient to be at their best. If we can get a person's Prozac level down from 20 mg to just a few milligrams, any side effects they have been experiencing may go away.

Given our present knowledge, we tell people with schizophrenia that they should not have the goal of completely eliminating medication. The only exception is if a person has a psychosis that is completely due to a pyrrole disorder. Most schizophrenics will come to us on four medications, all of them quite powerful. The amount of drugs they take now is far greater than they would have taken ten or twenty years ago, when a schizophrenic would typically have had only one prescription. We keep them on the medication during the first months of nutrient therapy, and continue both therapies for about five or six months. If we're really successful, an interesting thing happens. If a person without schizophrenia were to take the medications given to a typical

schizophrenic, they would sleep all day. What often happens with our patients is that they will call and say the voices have gone away, the delusions are improving, and they are happier, but they can't get out of bed because they are so tired. We tell them that it is time to go out and celebrate because that means they are getting better. We send them back to the psychiatrist, who will lower the dose until their energy perks back up. What we usually wind up with in successful cases of schizophrenic treatment is that they are down to one medication, at a dramatically lower dose, and are able to resume a normal life.

After treating more than 3,000 schizophrenics, we have learned that nutrient therapy can sometimes eliminate all of their symptoms, but they are prone to relapse within eight to ten months, and just a small amount of medication support can prevent this, in most cases. I look forward to a time—20 years from now or even earlier—when we gain enough knowledge that we can treat people without any drugs. I'm sure that time is going to come. We're heading in that direction.

JH: What is the biggest challenge you face in treating mental illness?

WW: Our biggest problem is not diagnosis, nor is it designing a treatment; our biggest problem is compliance—even in adults. Just imagine a teenager with oppositional defiance. It's hard to get them to do anything, much less swallow multiple capsules regularly. We have had to learn how to motivate people like that to get them to comply with the treatment.

One schizophrenic woman came to us at the age of about 30, and she was in terrible shape. Her only imbalance was a pyrrole disorder, and within three months of treatment, she became well again. From time to time over the next ten years, she decided to stop taking the treatments. She had two major relapses before she finally realized she couldn't stop the treatment even during times when she felt fine.

We've seen this pattern in other patients as well. After three or four years, they may start wondering if they really need to continue taking the nutrients. If they stop the treatment, they may feel fine for a

few weeks and decide they don't need it, but eventually they relapse. A general rule is that the speed with which they improve when beginning therapy is roughly equal to the period of time it takes them to relapse if they stop the treatment.

This brings up one of the problems with nutrient therapy. Drug therapy usually works quickly. Nutrient therapy is, by its very nature, more gradual. If a person with depression takes an SSRI, usually within a week they get an idea of whether or not it is helping them. These drugs can work quite fast because they go straight to the brain and block the reuptake of serotonin, which can alleviate depression. What they are doing is disabling serotonin transporters (SERT proteins), thus trapping serotonin in the synapses. If you take SAMe or methionine, you are not disabling those transport proteins; instead, you are changing how many there are by altering the rate of genetic expression. It can take one to three months for the population of those transport proteins in the brain cells to stabilize after starting nutrient therapy.

JH: Will your nutrient therapy ultimately reverse epigenetic problems?

WW: The epigenetic therapies that exist today cope with deviant bookmarks but do not change them. They work by causing part of the DNA to either uncoil or compress, which changes the amount of proteins produced. Researchers are now working to change these bookmarks in order to treat cancer, and they are making great progress. No one is working on this for mental health, but that day is going to come. Although we don't have any cures, we have treatments that are effective, and hopefully they will keep getting better. I see a future when doctors can identify the series of genes that are malfunctioning in a person with a serious disorder. I am quite sure there will be therapies that can normalize deviant bookmarks, and that will be a true cure.

JH: How would someone find a doctor trained in nutrient therapy?

WW: My website and book list doctors whom I know are capable in the use of nutrient protocols. I have been engaged in an international training program

for about the last ten years, and it's growing rapidly. In Australia, we now have 110 doctors who are really quite good at this, including several psychiatrists. We have quite a few doctors in Norway, and I just came back from Ireland, where we trained 34 people in these therapies last month. In the U.S., we have only a handful of people whom I know are really good at this. We're looking forward to our first U.S. training for doctors in North Carolina in February.

I would encourage all practitioners to learn more about nutrient therapy. One way of thinking about it is that it adds another weapon to their healing arsenal; it's not an "instead-of" therapy. Even psychiatrists who prescribe medication will find they can help people with much lower doses. If they do the blood testing we recommend, they'll be able to identify which medications are better than others for the individual patient. If they adopt nutrient therapy and lab testing protocols, they will find they can help people they could not help before. 📖

For more information about Dr. Walsh and the Medical Practitioner Training Program, see www.walshinstitute.org.

ABOUT THE AUTHOR



Photo © Jeff Singer

Jennifer Handy has a PhD in English from the University of Tulsa and currently teaches writing in Sacramento, California. She has published work in the journal *Style* and in the Modernist Journals Project online scholarly database. She can be contacted at: jenniferhandy@mailbolt.com.

References

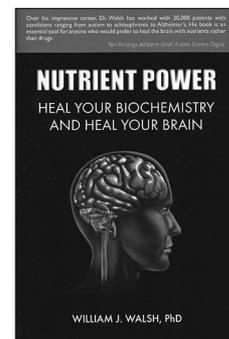
1. Niculescu MD, Haggarty P. Introduction. In: *Nutrition and Epigenetics*. West Sussex, UK: Wiley-Blackwell; 2011.
2. Pogribny IP, Ross SA, Koturbash I. Dietary factors, histone modifications, and cancer prevention. In: *Nutrition, Epigenetic Mechanisms, and Human Disease*. Boca Raton, FL: CRC Press; 2011.
3. Davis CD, Ross SA. Dietary components, epigenetics, and cancer. In: *Nutrition, Epigenetic Mechanisms, and Human Disease*. Boca Raton, FL: CRC Press; 2011.

4. Komninou D, Richie JP. Epigenetic dysregulation in aging and cancer. In: *Epigenetics and Human Health: Linking Hereditary, Environmental, and Nutritional Aspects*. Weinheim, Germany: Wiley-VCH; 2010.
5. Corbin KD. Metabolic syndrome, obesity, and diabetes. In: *Nutrition and Epigenetics*. West Sussex, UK: Wiley-Blackwell; 2011.
6. Migliori L, Coppedè F. Dietary factors and the emerging role of epigenetics in neurodegenerative diseases. In: *Nutrition, Epigenetic Mechanisms, and Human Disease*. Boca Raton, FL: CRC Press; 2011.
7. Schumacher A. Nutrition and the emerging epigenetic paradigm: Lessons from neurobehavioral disorders. In: *Nutrition, Epigenetic Mechanisms, and Human Disease*. Boca Raton, FL: CRC Press; 2011.
8. Schmidt RJ, LaSalle JM. Interactions between folate, other B vitamins, DNA methylation, and neurodevelopmental disorders. In: *Nutrition, Epigenetic Mechanisms, and Human Disease*. Boca Raton, FL: CRC Press; 2011.
9. Price WA. *Nutrition and Physical Degeneration*. 8th ed. La Mesa, CA: Price-Pottenger Nutrition Foundation; 2008.
10. Price WA. The causes of juvenile delinquency and modern degeneration. *J Am Acad Appl Nutr*. 1947, 33-37.
11. Price WA. Delinquents: juvenile. Unpublished manuscript located at: Price-Pottenger Nutrition Foundation, Lemon Grove, CA.

Nutrient Power

Heal Your Biochemistry and Heal Your Brain

By William J. Walsh, PhD



This book presents a science-based nutrient therapy system that can help millions of people diagnosed with mental disorders. Dr. Walsh's approach recognizes that nutrient imbalances can alter neurotransmitter levels and disrupt gene expression. His book is an essential tool for anyone who prefers to heal the brain with nutrients rather than drugs.

203 pages, hardcover, \$29.95

**To order: 800-366-3748 (in U.S.)
619-462-7600 • www.ppnf.org**