

End the Psychotropic Drug Cycle

Just over two years ago, in the February 2014 issue, I wrote an article titled, “Why Mood Disorders Should Be Treated From the ‘Bottom Up.’” I explained the neurological connection between the brain and the gut via the 10th cranial nerve and how gastroin-



Dr. David Williams

testinal disorders can be directly linked to psychiatric illnesses. That connection becomes rather obvious considering 95 percent of all serotonin (sometimes

called the “happy hormone”) is produced in the gastrointestinal tract. In a nutshell, in order to correct mood disorders, it is essential that you maintain the beneficial microflora in the gut by taking a quality probiotic and eating fermented foods. My parents always used to tell me that if I wanted to be healthy I needed to eat my vegetables. I’m starting to tell my son that if he wants to stay sane, he needs to eat his sauerkraut.

Since that article, I’ve continued to receive questions from people asking for additional ways to deal with depression, anxiety, and other common mood disorders. It’s not a surprising request when you consider psychotropic drug use by

American adults increased 22 percent between 2001 and 2010. One in five now take at least one psychotropic medication. Antidepressants are the second most commonly prescribed drug in the US, just after cholesterol medications.

In 2010, Americans spent more than \$16 billion on antipsychotics, \$11 billion on antidepressants, and \$7 billion on drugs to treat attention deficit hyperactivity disorder (ADHD).

Use of these drugs has exploded in large part because primary care physicians are prescribing them without first recommending an evaluation by a mental health professional. In fact, primary care doctors write four out of five prescriptions for psychotropic drugs.

Primary care physicians have very limited training in how to treat mental health disorders, yet most don’t hesitate to prescribe these drugs in lieu of recommending cognitive behavioral therapy (counseling with psychologists/other trained professionals) and/or safe, natural, nutritional alternatives.

If that isn’t bad enough, more and more clinical studies are showing just how ineffective antidepressants are for most people. The subjective nature of depression rating scales, biased criteria,

and “selective publication” of clinical trials continue to distort the perceived effectiveness of these drugs. (*Psychiatr Serv* 2009 Nov;(60)11:1439–45)

The Two Subtypes of Depression

Psychological and mood disorders are complex, and their causes can be quite varied. As such, solutions to resolve these issues vary. I’m not a psychologist... far from it. I have a hard enough time trying to “keep my own head on straight,” as my mother would say. But, at the risk of oversimplifying matters, I’ll discuss what has been called the two subtypes of depression: exogenous and endogenous.

Exogenous refers to depression that results from a reaction to stressful life events. For example, it could be triggered if you were notified that the IRS was going to audit your tax returns, your spouse left you, your dog died, and the engine in your car caught fire all on the same day.

Endogenous stress isn’t necessarily triggered by any particular event. Instead it may seemingly come out of nowhere and for no apparent reason. You might gradually begin to have feelings of guilt and worthlessness and lose

the ability to derive pleasure from once pleasurable activities such as exercise, hobbies, or sex.

Over the last decade or two, it seems that primarily care physicians don't bother to distinguish between the two types of depression, nor do they vary their treatment depending on that distinction. Both types are simply treated with antidepressants. This has been a windfall for antidepressant drug sales, but definitely not the best scenario for patients.

Of course, the two types of depression can overlap and can both be precipitated by stressful events, but exogenous depression is generally a reaction to stressful life events and endogenous depression is primarily biological and/or genetic in nature. The former may be temporary and resolve on its own, or it can be deep seated and require cognitive therapy to resolve underlying issues. The latter requires a change in brain/body chemistry and is typically the result of altered neurotransmitter levels.

I'm primarily going to talk about endogenous depression since there are a variety of overlooked methods that can be safely used to

positively influence your levels of neurotransmitters.

Major Neurotransmitters

Neurotransmitters are the naturally occurring chemicals in the body that transmit messages between nerve cells. More than 100 different kinds of neurotransmitters have been identified. I don't want to get too deep into the discussion of neurotransmitters. It can get quite confusing (to me, anyway). I'll only mention a few so that later you can better understand how diet and various supplements can be used to correct underlying problems that lead to depression.

The three major categories of neurotransmitters are amino acids (GABA, glutamic acid, aspartic acid, and glycine); peptides; and amines (epinephrine [also called adrenaline], norepinephrine, dopamine, serotonin, and histamine).

The three areas of mental health most commonly treated with drugs are depression, anxiety, and ADHD. I've talked a lot about ADHD in the past so right now I'll focus on depression and anxiety. Again, the line between these two conditions is often blurred since many primary care physicians don't make the distinction between the two, and at least half of people

diagnosed with anxiety are said to suffer from depression as well.

Treating Depression

The first line of treatment for endogenous forms of depression is usually medication—typically selective serotonin reuptake inhibitors (SSRIs). These include well-known names like Prozac, Paxil, Zoloft, and Lexapro. Less utilized but still popular alternatives to SSRIs are serotonin norepinephrine reuptake inhibitors (SNRIs), which include Effexor and Cymbalta.

The big misconception with these classes of drugs is that they correct neurotransmitter deficiencies by increasing the production of serotonin, norepinephrine, dopamine, etc. However, they don't raise overall neurotransmitter levels in the brain, nor do they increase production. Rather, they keep the neurotransmitters at the synapse or nerve junctions and prevent their reuptake. In other words, these drugs keep the neurotransmitters from being recycled. They merely interfere with your body's normal metabolism of serotonin and other neurotransmitters. In the short term, they may reduce symptoms, but they certainly don't cure the problem. Research has shown that SSRIs are generally no more effective than

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a placebo for mild to moderate forms of depression.

And new studies have now shown that continued use of these medications accelerates the depletion of neurotransmitters. At first, taking these drugs causes an increase of neurotransmitters at the neural junctions. With time, however, the body recognizes the excess and responds by naturally producing less of these compounds. (*ACS Chem Neurosci* 2013 Jan;4(1):84–8)

Additionally, when a greater concentration of these neurotransmitters begins to accumulate at the synapses or nerve junctions, the receptors gradually become less responsive. This helps explain why these drugs may benefit some people at first, but over time quit working, often causing patients to suffer a relapse.

Research has revealed that the relapse rate for SSRIs is 25 percent at six months, 50 percent at 12 months, and 75 percent after three years. (*Psychiatry Res* 2015 Feb;225(3):680–6)

As patients relapse, the standard procedure is to try other SSRIs or a combination of other antidepressant medications. You may have seen the television commercials advertising antipsychotic medications such as Abilify. In those ads, they prod current users of antidepressants to ask their doctor if taking Abilify with their current antidepressant might be “right for them.” The emotional roller coaster ride that ensues from switching, adding, and (rarely) subtracting various mood-altering drugs never ends for some individuals. They

become lifetime customers of the pharmaceutical companies.

Most, if not all, of the antipsychotic medications tend to be addictive. If they aren’t technically addictive, they can be extremely difficult, and even dangerous, to simply quit cold turkey. Getting off these drugs can be a nightmare and something that needs to be done with the help and guidance of a doctor familiar with the withdrawal issues.

Natural Depression Solutions

Natural antidepressants or mood enhancers don’t result in relapses or cause withdrawal issues. This is primarily because they either 1) supply the body with just the necessary natural components it needs to produce neurotransmitters, or 2) contain various compounds that help the body adapt to stress by balancing the neurotransmitters.

The plants and herbs typically recommended for depression can contain hundreds of complex components that work synergistically. They differ from antipsychotic medications, which are composed of purified, synthetic chemicals not found anywhere in nature. Understandably, our bodies react to each in a different way.

A few years ago, I wrote about one such herbal extract from Africa that comes from the succulent *Sceletium tortuosum*. Native bushmen have been successfully using this plant to increase energy, elevate mood, and relieve stress for centuries. The powdered extract, now available in this country, is known as Zembrin. Exactly how it works is still somewhat of a mystery, but there’s ample research and a safety record of over 300 years showing it safely improves

serotonin levels without any adverse effects. (*J Ethnopharmacol* 1996 Mar;50(3):119–30)
(*J Ethnopharmacol* 2011 Oct;137(3):1124–9)

I personally researched, evaluated, and tested Zembrin for a year or so. The results were amazing. Not only do I recommend it, I take it myself every day to help counteract the effects of stress. (To read my full write-up on Zembrin, refer to the March 2013 issue of *Alternatives*.)

Dealing With Anxiety

Anxiety disorders are the most common psychiatric illnesses now affecting children and adults. Sometimes SSRIs are prescribed to treat anxiety, but benzodiazepines (Xanax, Valium, Ativan, Klonopin, Librium, Halcion, etc.) are far more common. Of these, Xanax is the single most prescribed psychiatric medication in the United States.

Prescription rates for Xanax have been climbing at a rate of 9 percent since 2008. Xanax is addictive and reportedly up to 20 times more potent than Valium, making it a favorite among recreational drug users. Withdrawal can be difficult and the effects quite severe.

GABA

Benzodiazepines work by enhancing the effects of another neurotransmitter called gamma-aminobutyric acid (GABA), which tends to dampen central nervous system activity. In the process, benzodiazepines deplete vitamins D and K, folic acid, calcium, and melatonin.

Benzodiazepine drugs work by mimicking the actions of GABA. It’s interesting to note that alcohol also mimics GABA’s effect in the

brain by binding to GABA receptors, which inhibit nerve signaling and produce a sedative effect. But chronic overuse of alcohol desensitizes GABA receptors, and this adaptation explains the state of excitation characteristically associated with alcohol withdrawal.

In addition to cognitive therapy and counseling, one natural method of approaching anxiety issues is to increase GABA levels through supplementation.

There's always been some controversy surrounding the effectiveness of GABA supplements since it is physically impossible for GABA to pass through the blood brain barrier. Regardless, studies and patients continue to report that taking it has anti-anxiety action. (*Biofactors* 2006;26(3):201-8)

I suspect GABA works in part because it can reach the peripheral parts of the central nervous system, including the hypothalamus (the emotional control center of the brain), which is located outside of the blood brain barrier.

When taken orally, GABA comes into direct contact with vast areas of the gut. As I mentioned earlier, our gastrointestinal tract is directly linked to the brain via the 10th cranial nerve. In the October 2014 issue of *Alternatives*, I explained how gut microbes are able to "control" their environment through chemical manipulation of brain function. Based on some new research, it's apparent that the levels of GABA in the intestinal tract play a more crucial role in our mental and overall health than most realize.

I just reviewed a presentation from Northeastern University that showed that a number of the

most abundant bacteria in the gastrointestinal tract produce large quantities of GABA. I believe this is the first time that researchers have been able to identify a specific species of bacteria that either consumes and depletes GABA reserves, or produces GABA. (northeastern.edu/rise/wp-content/uploads/2014/06/Strandwitz.pdf)

One particular bacterium, *Flavonifractor sp*, was found to be an especially strong GABA consumer, meaning it could undermine mental health by depleting GABA levels. The researchers even went so far as to say that introducing more GABA-producing forms of bacteria into the gut and/or eliminating *Flavonifractor sp* could be therapeutic for mental health disorders.

We continue to learn more about the importance of maintaining the variety and health of the microflora in our gut and how it relates to our overall mental health. Isolating and studying the hundreds of different bacterial strains that inhabit our gut hasn't been easy.

One hurdle stems from the fact that half of the bacterial species in the human intestinal tract will not grow in the laboratory. We're learning that many species can only survive in the presence of others. In other words, they can't be isolated. This is one of the very reasons a pharmaceutical approach to manipulating our microbiome will be full of pitfalls, just as manipulating our body chemistry with drugs has been.

Our body is a very complex and intricate organism. It is connected to our internal and external environments physically, chemically, electromagnetically, and spiritually. Our

various systems don't function independently. We can't use a synthetic chemical to forcibly change a process in our body and expect everything else to function as normal. A change in one area triggers changes throughout our body and our health, many of which we still don't fully understand. A prime example is the microbiome of our gut.

Trying to artificially manipulate neurotransmitters can result in serious and risky side effects as well. This is obvious when you see the side effects these mood-altering drugs can cause. An alternative is to supply the raw materials and environment the body needs to produce and/or balance these natural chemicals. GABA is one such natural compound.

Oral GABA supplements are often quite effective at calming anxiety symptoms and lifting depression. The recommended dose is typically 3-5 grams per day. For the best anxiety-combating results, the dosage should be divided and taken throughout the day.

I should also mention that there are a couple of factors that can lower the effectiveness of GABA. For one, as we get older, our brains have a more difficult time forming the enzyme needed to make GABA. Oftentimes supplementing with manganese (1-5 mg per day) will correct this. (*Arch Biochem Biophys* 1984 Aug;232(2):427-40).

GABA receptors can also be easily damaged by free radicals. This is where eating a varied diet with plenty of fruits and vegetables, along with taking a high-quality daily multivitamin/mineral supplement, can help. Quality multis

usually contain manganese, so you won't have to take it separately.

In addition to helping to alleviate anxiety problems, there are other areas where GABA supplementation has been shown to help. Many of the benefits are linked to GABA's influence on the hypothalamus, the area of the brain that controls sleep and hormone release.

By preventing the over-excitement of neurons from external stimuli, GABA lowers stress on the adrenal glands. Excess cortisol from overactive adrenal glands results in feelings of restlessness, irritability, and insomnia. This is why so many people have found GABA beneficial in dealing with irregular sleep patterns, irritability, restlessness, and aggressive behavior.

GABA can be particularly useful in helping to prevent seizures and tremors. Most doctors are unaware of just how beneficial GABA can be in this arena. Most seizure disorders are characterized by low GABA levels, and studies have shown that oral ingestion of GABA can inhibit seizures. Animal studies suggest that combining GABA with pyridoxine (vitamin B6) may work best. (*Brain Res* 1978 Oct;154(1):182-5)

For issues other than anxiety, and particularly sleep difficulties, it is best to take GABA at bedtime on an empty stomach. One gram is generally all that's needed to improve sleep.

A few studies have shown that GABA increases levels of the human growth hormone. Bodybuilders have capitalized on this by using GABA to burn excess fat and pack on more lean muscle tissue. They typically take 3-5 grams mixed

with juice about 30 minutes before bedtime.

Keep in mind that GABA is not a stimulant like many of the fat burning and weight loss products sold today. It works instead by supporting the production of hormones that help build lean muscle mass. And the more lean muscle you develop, the more your body naturally becomes thermogenic. Unlike fat cells, muscle cells stay in a constant state of tension, which requires energy. Muscle cells burn fat even when at rest.

Additionally, GABA can help lower high blood sugar levels in diabetics by enhancing insulin sensitivity. By improving the effects of insulin, GABA has been shown to reduce appetite in some individuals.

Through the production of nitric oxide and the relaxation of blood vessels, oral GABA can also decrease blood pressure. (*Fed Proc* 1984 Jan;43(1):32-8)

GABA is considered very safe and can be taken without any serious side effects. It's rare, but occasionally one might experience temporary shortness of breath and/or minor itching with doses above 3 grams. Those are about the only side effects ever reported. To avoid any of these problems, I suggest starting with 1 gram daily and gradually, over a week or two, working up to a higher dose of 3-5 grams.

L-Theanine

Another natural anti-anxiety compound is the amino acid L-theanine.

Theanine is very unique. It wasn't until 1949 that Japanese researchers identified theanine

and found that it accounted for 50 percent of the free amino acids in green tea. Only after that point did research begin to uncover the secrets of green tea. We now know that the combination of two elements, theanine and caffeine, makes green tea different than any other beverage.

Besides the tea plant, the presence of theanine is rare in nature. It has only been found in one species of edible mushroom (*Xerocomus badius*) and the guayusa plant in Ecuador. I haven't consumed the mushroom, but I have had the tea from guayusa leaves while traveling in Ecuador.

Guayusa leaves are brewed into tea by the Kichwa (or Quechua) people of Ecuador, typically before the light of day. It's their version of a caffeinated energy drink that helps get them through the day. It's actually more like coffee than tea, except that it contains more antioxidants, theanine, and lots of chlorogenic acids, the natural compounds that have become popular for aiding in the loss of body fat.

Guayusa tea has recently become available in this country and can be found online from Amazon or jet.com, if you're interested in trying it.

Theanine is a relaxant that promotes the production of GABA. It has been shown to reduce anxiety and increase relaxation without sedation. Another unique feature of theanine is its ability to cross the blood brain barrier. (*Trends in Food Science & Technology* 1999;10(6-7):199-204)

Theanine (400 mg daily) safely improves sleep quality without the grogginess or sedative side

effects associated with sleeping pills. (*Altern Med Rev* 2011 Dec;16(4):348–54)

It has also been shown to help the brain focus and improve memory. It promotes the production of nitric oxide in blood vessel cell walls, resulting in the relaxation of blood vessels, improved blood flow, and lower blood pressure.

One of the more interesting findings about theanine is how it “decaffeinate” green and guayusa teas. High-grade green tea naturally contains high levels of caffeine, yet these high-caffeine green teas are more relaxing and soothing than lower grade teas. This is because theanine decreases levels of serotonin that have been artificially elevated by caffeine. (*Nutr Rev* 2008 Feb;66(2):82–90) (*Biol Psychol* 2008 Feb;77(2):113–22)

In effect, theanine combined with caffeine in green and guayusa teas provides all the benefits of caffeine (alertness, concentration, speed of perception, and improved task performance) without any of caffeine’s downsides. (*Psychopharmacology* 2008 Jan;195(4):569–77)

One of the most researched aspects of theanine is its ability to increase alpha brain wave activity. Alpha brain waves promote relaxation, attention, and a calm state of mind. (*J Nutr* 2008 Aug;138(8):1572S–1577S)

One study found that taking 200 mg of theanine enhanced alpha waves, decreased heart rate, and improved reaction times in participants labeled as high-stress individuals. Those labeled as low-stress individuals remained

unaffected. (*J Functional Foods* 2011;3(3):171–8)

In another study, 20 individuals with high anxiety exhibited significantly increased alpha waves following the consumption of theanine. (*Korean J Nutr* 2003;36(9):918–23)

The recommended dose of theanine is typically 50–200 mg daily. But unless you have access to guayusa or really high-grade green tea, it’s going to be difficult to ingest these levels of theanine without taking a supplement. Teas like Dragon Well or Biluochun have greater levels of theanine (as much as 50 mg per cup), but they are very expensive and hard to find in this country. Most of the green teas sold here contain less than 10 mg of theanine per cup.

Fortunately, the Japanese company Taiyo invented a process to produce a theanine supplement using enzymes rather than having to extract it from tea leaves. The Japanese government approved its use in foods in 1964 and since that time, it can be found in chocolate, soft drinks, and even cosmetics.

Numerous companies now sell theanine in 100 mg capsules, but the most cost-effective way to get theanine is in bulk powder. Of course, you’ll have to measure it and either encapsulate it or mix it with some liquid.

There are also several bodybuilding products that “stack” theanine and caffeine. These products typically contain a mixture of 100 mg of caffeine with 200 mg of theanine, which is the ratio followed in most of the studies I’ve mentioned.

A company called Powder City (717-745-4795 or powdercity.com)

has some of the better prices I’ve seen. They sell both L-theanine and powdered caffeine for far less than companies selling encapsulated products.

Back to the Basics

All of the drugs and natural supplements I’ve discussed have a common denominator: They attempt to calm the nervous system. If you take a closer look, it becomes evident that the spike in depression, anxiety, ADHD, and many of the other mood-related disorders are rooted in the overstimulation of the nervous system.

There have been more changes in our environment and lifestyles in the last 50 to 75 years than in the preceding 3,000 years. The technological advances in communication and transportation in just the last couple of decades are astounding. Practically every change has resulted in additional stimulus to our nervous system.

From a mental health standpoint, it has taken a toll. And based on our rapidly changing world, I can only believe things will get worse—much worse—before they get better. This isn’t just my personal opinion. It is the prediction of the Centers for Disease Control and Prevention (CDC), the World Health Organization, and dozens of other groups that have been charting the trend for decades.

The CDC reports that depression is the most common type of mental illness, affecting more than 26 percent of the US adult population. In the next four years, it will be the second leading cause of disability

throughout the world, trailing only ischemic heart disease.

If that doesn't sound scary enough, consider the following: A report from the US Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, states: "It is now estimated that only about 17 percent of US adults are considered to be in a state of optimal mental health."

If you don't believe the pharmaceutical industry has seen these projections and intends to capitalize on the fact that 83 percent of the population currently "needs" an easy solution to their mental problems, you're kidding yourself. This is undoubtedly one of the biggest financial opportunities (read: government-supported public scams) they have ever seen.

Over the next several years, we'll start to see a major push by pharmaceutical companies, their various front organizations, and governmental agencies to expand the definition of mental illness, promote "screening programs" in our schools and communities, and publicize the urgent need for more pharmaceutical intervention to treat mental health problems.

Pharmaceutical intervention will be promoted as the solution. Cognitive therapy will be given lip service, but unfortunately, it won't be made the priority or starting point for dealing with mental health issues, as it should be. And little (if any) attention will be focused on prevention and self-help techniques.

I'm certainly not trying to oversimplify mental illnesses. They are very real, serious diseases. However, just like most other

health matters, a return to the basics is very often the place to start. Our bodies were created with an innate ability to heal themselves, if and when they are provided with the proper raw materials and environment to do so. Our bodies and their needs haven't changed much in the past couple thousand years, but our environment has changed dramatically.

I've talked in the past about the need to change the omega-3/omega-6 fatty acid ratio of our diets to help provide the necessary essential fatty acids for adequate neurotransmitter production. I've talked about the importance of the myelin sheath (the insulating sheath covering nerves) and how it is the key to neurological repair. I've also talked about the gut-brain connection, the hypothalamic/pituitary/thyroid axis, and the role of the adrenal glands and hormones in mediating the stress response. But one area that never seems to garner enough attention when it comes to mental health is the importance of mindfulness.

Mindfulness Practice

Mindfulness is defined as "paying deliberate attention to one's present experience as it unfolds in a particular way, on purpose, in the present moment, without judgment or the usual commentary."

It's hard to talk about mindfulness without mentioning its connection to green tea. Green tea is relatively new to this part of the world. It wasn't even recognized outside of China until the early 1990s.

The Chinese have been drinking green tea for more than 3,000 years. Monks have been

incorporating tea into their meditation for thousands of years as well. Among its many other health benefits, they knew it enhanced the ability to concentrate, learn, and maintain a state of mindfulness.

You may have heard about Buddhist monks who practice mindfulness meditation. While Buddhism devotes more time and study to the practice of mindfulness than any other religion, it is also a part of Christian traditions as well as other religions. Mindfulness in Christianity is a way to become closer to God and a life of greater holiness. Practicing mindfulness isn't some religious experience or weird, exotic escape from reality. It is something we've all experienced naturally at different times in our lives.

We see a form of mindfulness when someone has a near-death experience and is overcome by a heightened sense of awareness. Everything seems to take place in slow motion and he/she becomes aware of every detail of the situation as it is taking place. To a degree, mindfulness can occur when one falls madly in love and the mind acutely focuses completely on the present with no regard to the past or future.

You could say that these days, *mindlessness* has become our default setting. If you pay attention to your ordinary thought processes, you'll discover that you probably don't focus on the present. Rather, you ruminate on the past and anticipate the future. You worry about what happened or what's going to happen without taking time to stop and smell the roses.

Our minds are now constantly bombarded with external stimuli. In

2010, the Kaiser Family Foundation found that kids aged 8 to 18 spent 53 hours a week on electronic devices. I don't want to demonize technology, but in many respects, it has gotten out of hand. There's no doubt that, due to our love of technology, outdoor play is now a thing of the past.

Visits to parks have plummeted. Even visits to our own backyards are down. I can remember as a child begging my mother to let us keep playing outside well after dark. That's rare these days.

In a 2004 study, some 70 percent of mothers reported that they played outside as children, but only 31 percent of their children do. And a recent Nature Conservatory poll reports that only 10 percent of American teens spend time outdoors every day.

It's even worse for adults. The average American adult spends 93 percent of his or her time indoors, 87 percent in buildings, and 6 percent in vehicles. According to the Harvard School of Public Health, adults spend less than 5 percent of their day outside. Based on these studies, sadly, most people spend more time in their cars than they do outside. (*Contemporary Issues in Early Childhood* 2004;5(1):68–80)

We can achieve mindfulness through practices such as meditation, but we also experience it by simply interacting with nature. There's an excellent article in the January 2016 issue of *National Geographic* titled, "This Is Your Brain on Nature." Study after study has documented both mental and physical benefits of getting outdoors.

Nature is an effective antidote for anxiety, depression, and ADHD.

(The amount of time one spends outdoors has been directly linked to obesity, nearsightedness, blood pressure, heart disease, stroke, and creative problem solving.)

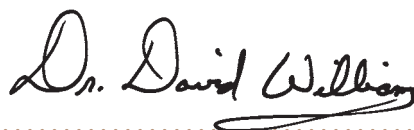
One study revealed that a 15-minute walk in the woods resulted in a 16 percent decrease in the stress hormone cortisol, a 2 percent drop in blood pressure, and 4 percent drop in heart rate. (*Environ Health Prev Med* 2010 Jan;15(1):18–26)

Researchers in Finland, a country with very high rates of depression, alcoholism, and suicide, now recommend a minimum "nature dose" of five hours a month to fight depression. Their data show that a 40- to 50-minute walk in a natural environment is enough to produce significant physiological and mood changes. (*J Environ Psychol* 2014;38:1–9)

Walking in the city doesn't provide the same benefits as walking in a park. No one seems to understand why, but I suspect it has to do with mindfulness. In a city environment, there is an inherent tension and mental focus is more structured. But nature allows the brain to wonder, reflect, rest, and recover from excess stimuli.

Right outside our door, most of us have a convenient, inexpensive, and effective antidote to help deal with depression and anxiety. So take advantage of it. And a cup of green tea wouldn't hurt either.

Until next month,



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