DR. MICOZZI'S

INSIDERS' CURES

The Insider's Answer for DODGING DEMENTIA

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Brain deficiencies and disorders have been a mystery to medicine for centuries. In fact, scientists are just as puzzled about "mental health" and disease today as they were a hundred years ago. This is despite the efforts of our recent politically-designated "Decade of the Brain" (1990-1999). Unfortunately we've yet to overcome this century-long challenge despite the lavish funds poured into the usual academic-medical complex.

Years ago, many mental illnesses were thought to have an underlying disease (or pathology). If an underlying disease could be found, then a treatment could be developed. Sigmund Freud originally became a brain pathologist, searching for these organic causes. But when the brains of people with mental illnesses were found to be "normal" pathologically, he eventually switched courses. This is how he came to establish psychoanalysis as a different path to understanding mental health.

On the other side of the equation, brain disorders that, in fact, turned out to have an underlying pathological cause were mistakenly thought to be psychological illnesses. For example, "general paresis of the insane" turned out to be caused by tertiary syphilis, where the untreated syphilis organisms go on to destroy brain tissue.

Modern psychiatry still struggles with how to diagnose and classify brain disorders. Periodically they issue a new edition of the *Diagnostic and Statistical Manual* (DSM), the "bible of mental health." But lacking an understanding of the mechanisms of many disorders, we fall back on using statistical descriptions and characteristics.

In addition, the process for updating the DSM for 2012 has been fraught with conflict and dissension, as documented in the popular press. And of course, it's all due to the same problems we find throughout modern medical research: academic careerism, medicalization of life events and processes (which particularly have an impact on how people are "feeling"), limitations in research methodology, government interference with professional practices, politicization and political correctness, and the bias to replace psychotherapies with psychiatric drug therapies.

Another part of the problem is the large and powerful organization of professional psychologists. While they do not use psychiatric drugs, they have been slow to embrace the kind of "mind-body" therapies that have been effective for problems that seem to cross the border between mind, body, and spirit (although they politely gave audiences to me and my colleagues, and our medical textbooks, at their annual meetings through the 2000's).

And of course all the while, research, development, and discovery of effective treatments for you slog on at a snails pace.

So what, exactly, DO we know?

All confusion and debate aside, thankfully, there are some important fundamentals about how the brain works that are central to understanding the similarities and differences inherent in brain biology.

The brain is very metabolically active. Therefore, it needs a constant supply of a lot of blood to deliver oxygen and glucose to support brain metabolism. One-third of total blood volume flows to the brain. That means one-third of the blood cells, one-third of the oxygen, one-third of the blood sugar and other nutrients circulating in our blood is needed by the brain.

Accordingly, the brain is very sensitive to deprivation of oxygen, glucose, and nutrients. In fact, the brain will die if deprived of oxygen and glucose for only 2-3 minutes (loss of consciousness, coma, then death). This is a striking difference when compared to the needs of the lower body. For example, during surgery, when blood flow is clamped off below the kidneys, the legs can go without oxygen for hours and return to normal health as long as blood flow is eventually restored.

The brain is also very selective in what it allows to pass from the blood into the brain tissue. This is something we refer to as the "blood-brain barrier." While other tissues of the body are generally bathed in the same constituents that are carried in the blood, the brain carefully selects what is allowed to pass into the fluids that surround the brain (cerebro-spinal fluid). This property is fortunate because it keeps out a lot of toxins that would be harmful to the sensitive brain tissue.

This selective nature of the brain becomes critical when it comes to medications that are prescribed for

mental health and disease. At the same time, it's important to make sure any nutrients you may be taking are in forms that will make it across the highly selective blood-brain barrier.

Neuro-nutritive nutrients for your body and mind

There are many approaches to maintaining health and managing diseases of the body using herbal and dietary supplements. However, when it comes to understanding and applying basic nutrition to enhancing and improving the normal mental functions and performance of the mind**,** there is still the "blood-brain barrier" to contend with. The good news is, it *can* be done.

Through the combination of cognitive science and nutritional medicine, science has developed dietary supplements and food products that can enhance basic brain and mental function and performance. While there is much *talk* of "smart drugs," which may theoretically be taken by anyone to support improved mental performance, there is some *proof* of smart nutrients that cross the blood-brain barrier and help the brain do its basic job using safe and effective vitamins, minerals, and natural constituents.

Unfortunately, many of these natural "smart nutrients" are still clouded in controversy. Fielding heavy criticism from the modern medical-complex. So much so, that many "alternative" practitioners will even avoid the topic completely.

Even herbs that have been used effectively for decades—such as *ginkgo biloba* for dementia, *kava kava* for anxiety, *St John's wort* for mild-moderate depression, *valerian* for insomnia, and *feverfew* for migraine headache. So you can imagine that when it comes to addressing something as serious, and confounding, as Alzheimer's disease, nearly everyone looks the other way. Which is tragic, because there *are* alternatives that may help.

And recently, the research behind one nutrient in particular is beginning to lead the pack:

Berberine—the Alzheimer's answer *no one will pay attention to*

I'll share the inside scoop on berberine in just a bit. But first, it's important to keep in mind…

Alzheimer's is just *one form* of devastating dementia. The common denominator in all dementia is neurodegeneration, destruction and loss of neurons, or nerve cells in the brain. The common neuro-degenerative problems afflicting the brain and mind include:

Alzheimer's disease (AD). Currently, it's estimated that nearly 5 million Americans have AD. It's also the 8th leading cause of death in the United States. And once diagnosed, the average life span of an Alzheimer's patient is eight years. The spectrum (and fearful specter) of age-related cognitive decline is a major neuropsychological area that has yet to be addressed by the pharmaceutical or the natural products industry.

Schizophrenia-related cognitive impairment. Today as many as 60 million people worldwide have schizophrenia. Most people with schizophrenia also suffer from cognitive impairment, although it is independent of the psychotic symptoms of the illness. In North America, it is estimated that more than two million people have schizophrenia. While there is an $18-billion drug business to treat the psychosis associated with schizophrenia, there are no approved drugs for treating the cognitive impairment.

Mild cognitive impairment from bypass surgery. Approximately 500,000 patients in the U.S. and 800,000 patients worldwide undergo coronary artery bypass graft (CABG) surgery every year. It has now been recognized that the changes in blood flow associated with the procedure bring about dementia in many patients. Currently there is no therapy available approved to ameliorate or treat the cognitive damage associated with artery bypass surgery.

Stroke. Every 45 seconds in the U.S., someone experiences a stroke. This fact translates into approximately 700,000 new or recurrent strokes in the U.S. each year. It is the second leading cause of mortality in the world, the third leading cause of death in the U.S., and is the leading cause of long-term disability. In spite of this, there has been failure to provide effective treatments.

And berberine is one mental powerhouse that may have the ability on almost all fronts to provide

greater cognitive support and protection. To dodge dementia before it stops you. And it's a solution you aren't likely to hear about elsewhere.

And that's just the tip of it all…

Brain health might be the obvious problem no one is paying attention to, but that doesn't mean it's the only thing this medical marvel has going for it. Berberine has been shown to help in the fight against **diabetes…cholesterol …infection…inflammation and more**.

Berberine is a natural powerhouse that has long been used throughout history. It is still used today in Northern India, as a bright yellow coloring dye for leather, wood, and wool fabrics. In fact, if you have a woven Indian carpet on your floor, you have probably already noted the bright yellow color imparted by berberine. It also has a use in modern medicine and pathology because of its ability to stain certain tissue cells to show their appearance under the microscope.

Berberine is found in numerous plants worldwide, including the large plant family *Berberis*, or the barberries. It is also found in the important (and ecologically threatened) medicinal plant *Hydrastis canadensis* (Goldenseal), and the important Chinese herb *Rhizome coptidis* (Golden thread or *Huang-Lian*), among others. Berberine is usually found in the roots, stems, and bark. Chemically, it is an isoquinolone alkaloid, and the plant alkaloids are known to have a number of potent biological activities.

Indeed, typical of plant alkaloids, berberine has a number of health effects, throughout the body, including acting as a potent antibiotic (which can also overcome infections caused by bacteria that are resistant to drug antibiotics), anti-fungal, and anti-parasitic.

Hundreds of recent research studies (far too many to share in detail here) reveal this medical marvel can provide a host of additional health benefits. It's been shown to help lower cholesterol, improve blood sugar metabolism, and has anti-cancer properties.

And incredibly, new research shows berberine may also hold the key to preventing and even slowing the progression of Alzheimer's disease and other dementia, like nothing before it. In part, because berberine has been found to be able to penetrate the blood-brain barrier and affect cells of the central nervous system. And new experimental results have found that berberine works in three distinct ways:

1. It can safeguard your brain from the dangerous oxidation damage that can "eat away" at brain tissue.

2. It targets and destroys memory-killing enzymes that have long thought to be key in the development of Alzheimer's.

3. It promotes healthy blood flow directly to the brain—an essential element to conquering dementia.

Berberine also seems to be able to block certain nerve receptors, which may partly explain its anti-Alzheimer and neurotransmitter modulating properties. Other experimental studies have shown berberine to increase neurotransmitter (noradrenaline and serotonin) levels in the brain. Berberine may also act in a manner comparable to some anti-depressant drugs by increasing available serotonin in the brain.

Results suggest benefits in patients with depression, bipolar affective disorder, schizophrenia, or related diseases in which cognitive capabilities are affected.

The half-life of berberine suggests administration of a daily dose of 500 mg, taken two or three times per day to achieve a steady state.

Beyond berberine

As mentioned above, there are several natural products that have been shown to help protect the brain. Following is a quick list of those least talked about in terms of brain function and mental health by both mainstream and alternative practitioners.

Creatine

Creatine is a beta-amino acid popularized in recent years by bodybuilders and other athletes for muscle development and repair of muscle tissue after exercise, as well as energy-enhancing properties. Some reports suggest that people over 60 do not make enough creatine to maintain muscle and strength.

But creatine is becoming more widely researched for its neuro-protective and neurogenesis benefits. For example, as an element for some alternative treatments for Amyotrophic Lateral Sclerosis (ALS) and

Parkinson 's disease. The dosages for such treatment would be at a higher, therapeutic level, and not the more typical recommended dose of between 1 and 2 grams. Accordingly, use of creatine should be individually tailored and monitored under supervision of a qualified health practitioner.

Lecithin

Lecithin is generally a mixture of glycolipids, triglycerides, and phospholipids (e.g. phosphatidylcholine, phosphatidylethanolamine, and phosphatidylinositol). Phospholipids are the major component of the membranes that encase every cell in the body. In the brain, phosphatidylcholine and phosphatidylinositol protect nerve cells by forming a protective sheath around them to insulate them, allowing nerve impulses to move more efficiently to and between cells. In addition, phosphatidylcholine is a precursor of acetylcholine, a neurotransmitter in the brain and muscles. An increase in acetylcholine may lead to more efficient nerve and muscle function and increased memory performance and capacity. Unfortunately, some medications can deplete acetylcholine. Supplementing with lecithin may help counter this drug side effect.

Some qualitative research on lecithin supplementation found that when a short-term or long-term memory deficit exists, a single therapeutic dose of lecithin can increase memory performance within 90 minutes. It may also help improve verbal and visual memory. And lecithin has neuro-protective effects related to Alzheimer's disease.

Lecithin is available in 1,000 mg supplement doses, but may require up to 25 grams (25,000 mg) daily, used in food quantities, to see the full benefits.

Royal Jelly

Royal jelly is an amino acid-rich gelatinous substance secreted by worker bees to feed queen bees. Since queen bees grow to be considerably larger than worker bees, and live much longer, it has been assumed by many enthusiasts to produce benefits for humans. The popularity of health products containing royal jelly has increased over the past years. While its anti-aging and energy-enhancing properties have been reputed for many decades, only recently has more rigorous research been performed to separate fact from folklore.

Modern research shows that royal jelly improves lipoprotein metabolism, promotes growth of neuronal stem cells and neurons, inhibits oxidation of lipids (as in brain tissue) and is a general antioxidant. A dose of 6 to 10 grams (6,000 to 10,000 mg) per day, essentially used in food quantities, is recommended.

Cocoa

Cocoa contains biologically active flavonols and polyphenols. Flavonols have recently been the subject of much research. They have been found to enhance vasodilation which in turn decreases blood pressure and increases peripheral blood flow to the muscles as well as to the brain. Cocoa has also been shown to improve lipid metabolism. And international researchers have recently uncovered even more healthy properties associated with the flavonol antioxidants found in cocoa beans.

Eighteen chocolate-centered studies—including investigations of how cocoa might affect blood pressure, heart disease, painful nerve disorders and cancer risk—were presented at the American Chemical Society's annual meeting in March 2012. These studies establish the biological plausibility of antioxidant effects of dark chocolate in small groups and even demonstrated the potential harm-reducing effects for smokers.

But don't look for health benefits from your favorite milk chocolate candy bar. Most of the studies used unsweetened regular cocoa powder. There's a couple of degrees of separation because when you make chocolate you add fat, in the form of cocoa butter and sugar. And nobody's going to eat a tablespoon of unsweetened cocoa. So the studies used cocoa-flavonoid compound supplements, with average doses of 400 to 500 milligrams. Which is equivalent to 32 bars of milk chocolate or eight to nine bars of dark chocolate. Too much for even the most die-hard chocoholic.

But no matter how much you love dark chocolate, it simply can't substitute for healthy eating, exercise, and above all, cutting back on smoking.

You can find cocoa flavonol extract supplements with up to 1,000 mg in natural supplement shops and from online supplement retailers.

Virgin Coconut Oil

Coconut oil, in its virgin state, is a tropical oil consisting of medium-chain fatty acids that convert readily into energy and are not stored in the body as fat. These kinds of essential fats are important for brain tissue cell membranes and neuronal sheaths.

A saturated fat, it has been maligned for several decades as a result of misinformation by the vegetable oil industry (see the Weston A. Price Foundation's website at www.westonaprice.org.) Alternative health practitioners advocate coconut oil consumption for weight loss and maintenance regimens. Coconut oil is a rich source of lauric acid and monolaurin, known agents that are being explored by pharmaceutical companies for drug development potential. Coconut oil lowers lipoprotein cholesterol levels in the blood and tissues and lowers lipoprotein markers for heart attack. A dosage of 20 grams (20,000 mg), essentially in food quantities, appears beneficial.

Taurine

Taurine is so named because it was initially isolated from ox bile (*Taurus*, the bull). It is a beta-amino acid gaining attention from researchers and supplement manufacturers for health-promoting and anti-aging properties.

Research has shown taurine plays a role in the function of skeletal muscles and the central nervous system, as well as regulating blood pressure and glucose levels. It's also being explored as an adaptogen and anti-anxiety agent. Taurine has been identified as an amino acid neurotransmitter. A dose of 500 mg per day offers sufficient health benefits.

Lutein

Lutein is a prominent constituent of green, leafy vegetables. I helped discover its role in human metabolism and nutrition in the 1980's. Since then, it has developed a role in vision and eye health as a dietary supplement. Since the eye contains neurological tissue, this has led to current interest in its possible benefits for the brain. In addition to eating green leafy vegetables, a daily dose of 12 mg of lutein is recommended.

Going above and beyond for total protection

In addition to supplementation, staying active (mentally and physically) will help keep your brain fit as well as your body. Do the daily crossword puzzle and keep up with your monthly *Insiders' Cures* newsletter and *Daily Dispatch* emails.

A healthy diet and maintaining a healthy weight is also important (see *The "Top of the Food Chain" Cure for Obesity* in your free Library of Confidential Cures). And controlling blood pressure and heart disease is key to maintaining healthy circulation and blood flow to the brain (and to avoiding strokes) (see *High Blood Pressure—Silent, Deadly, but Easily Overcome* in your free Library of Confidential Cures). Controlling diabetes is also critical as high blood sugar can destroy nerves and the blood vessels that supply them.

Not to be overlooked…

In late-breaking news, the FDA has now issued a warning that statin drugs for lowering cholesterol (see *High Blood Pressure—Silent, Deadly, but Easily Overcome* in your free Library of Confidential Cures) may cause memory loss and confusion, in addition to raising cancer rates and interfering with blood sugar in diabetes.

And in an ongoing effort to bring you the whole truth about tobacco (and not just the politically correct version), it has been found that nicotine improves dementia and cognitive impairment (see *The Day Science went Up in Smoke* in your free Library of Confidential Cures).

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