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Probiotics on the Brain

How a Healthy Belly Can Lift Depression

You coexist with a giant community of microbes that lives in your gut. And not only is this ecosystem of trillions of bacteria, viruses and fungi in your lower gastrointestinal tract sending you messages — your brain is talking back.

It's only in the past five years or so that science has begun to understand the diversity, importance and "language" of the "microbiome" in your gut. But it has always been part of us.

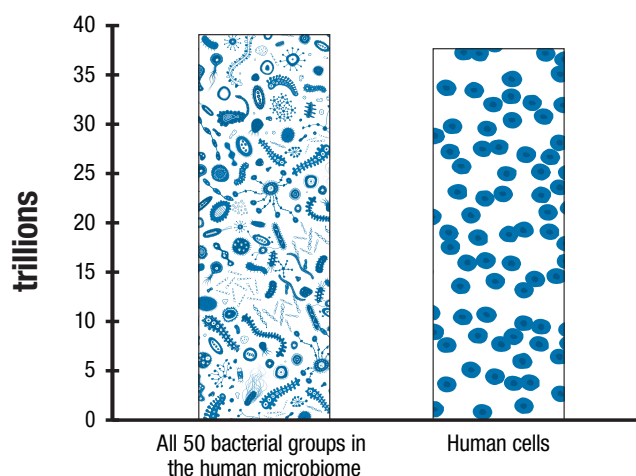
Like Siamese twins, your gut and your brain are interconnected. When one gets nervous or upset, the other does, too.

Mark Twain once said there were two kinds of public speakers: "Those that are nervous and those that are liars."

And there's a clip on YouTube where you can see Apple founder Steve Jobs telling his assistant he's "not kidding" when he complains about feeling physically sick before a television interview.

Steve Jobs and Mark Twain were referring to butterflies, jitters and those occasional intestinal cramps you get in your stomach just before an important event or if a big decision is hanging over you.

THE ECOSYSTEM WITHIN



There are around 50 categories of bacteria in the microbial ecosystem in your gut, roughly the same number as there are human cells in your body.

That happens because your gut and brain share the same nerve chemistry and, with the help of your microbes, these two areas of your body have an ongoing dialogue.

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Most doctors still ignore how important these microbes are to your physical and mental health. But they are a kind of “biochemical telegraph” system. Your brain, as well as your emotional state, can impact your gastrointestinal, hormonal and immune functions — and your gut health also influences your brain.

Scientists call this the “gut-brain axis.” And now the latest research reveals that dysfunction among these trillions of gut bacteria can also cause brain dysfunction.

But the good news is that, unlike your genes, you can change the makeup of your microbial community.

*You’ve probably heard of **probiotics**. But in this month’s **Confidential Cures**, I’m going to show you how “**psychobiotics**” can banish moodiness, anxiety, depression and many other mental health issues.*

Let me explain...

How I Discovered the Gut-Brain Connection

I’ve been fascinated by the tiny organisms in our gut and their impact on our health since I was in medical school more than 30 years ago.

As a young doctor, I first saw the connection between the gut and brain in patients who were suffering from depression. Many also suffered from abdominal pain, constipation, diarrhea, bloating, irritable bowel syndrome, ulcerative colitis, Celiac and Crohn’s disease, as well as other gut-related disorders.

The idea that microbes in your gut can affect your brain is not a new one — it’s just been forgotten. In 1896, doctors writing in *Scientific American* concluded that “certain forms of insanity” might be caused by infectious agents “similar to typhoid, diphtheria and others.”

But after Freudian psychoanalysis became popular in the first half of the 20th century, the microbial theory of mental illness simply slipped out of fashion.

Today, the vast majority of doctors prescribe antidepressants for your depression — and drugs like Imodium and Rifaximin for your gut complaints. Their choice of prescription is almost always based on your most troublesome symptom — not on the root of the problem itself.

Modern medicine today remains focused on how to kill bacteria. But, instead, we need to accept the symbiotic relationship we have always had with them.

Studies now prove that emotional factors, such as stress and depression, can influence the development of many chronic gastrointestinal illnesses via the gut-brain axis.¹

You see, stress impacts the integrity of your gut lining and alters the way the muscles in your gastrointestinal tract mix its contents after you’ve eaten. And it also changes the delicate balance of your gastric juices, as well as the protein makeup.

Studies show how these changes alter the habitat and composition of your resident gut bacteria and the way they function.²

On top of this, stress releases *catecholamines* into your gut. These are hormones produced by your adrenal glands as part of your body’s fight-or-flight response. But studies now reveal they also influence your microbial community by interfering with inter-bacterial signaling.^{3,4}

Hippocrates, known as “the father of medicine,” got it right more than 2,000 years ago when he said: “All disease begins in the gut.”

The Power of “Psychobiotics”

These single-celled microbes in our gut — called microflora — are actually good guys. They help maintain the biological systems that keep your body and brain on track by squeezing out the “bad bacteria” — like *E. coli* and *C. difficile*, which produce toxins that poison, cause illness and speed up the aging process.

Good bacteria also protect and influence your nervous system. And these tiny organisms in your gut play an important role in regulating your immune system responses. Change in the delicate balance within your gut's microbial community can even impact the chances of you developing autoimmune diseases, such as multiple sclerosis, diabetes and Parkinson's.

You see, the sheaths of tissue lining your esophagus, stomach, small intestine and colon contain a network of neurons, neurotransmitters and proteins that act like a “second brain,” controlled by the *enteric nervous system* (ENS).

This system sends messages back and forth between the gut and brain via one main highway called the *vagus nerve*.

Everything that ends up in your gut has an impact... somewhere in your body. And the ongoing battle between good microbes and bad microbes determines your mental state.

Studies at Kyushu University in Japan compared the output of the stress hormone *cortisol* in bacteria-free mice with cortisol output in normal mice. And researchers found the bacteria-free mice displayed much higher levels of stress.

But, as part of the same experiment, they gave the same germ-free mice a bacterium called *Bifidobacterium infantis* — a friendly probiotic that thrives in the intestines of most healthy infants.

And guess what? Their stress responses suddenly became normal.⁵

Just last year, researchers at the University of Cork in Ireland showed how a compromised microbiome in mice resulted in anxiety, depression and even autism.^{6,7}

But the studies also revealed that normal behavior could be restored by treating test subjects with certain strains of benign bacteria.⁸

This is where “*psychobiotics*” enters the picture.

Tweak Your Immune System to Beat the Blues

I have been recommending “*psychobiotics*” to my patients for some time now — and the results have been startling.

I've found that patients with anxiety or depression also often have chronic inflammation or damaged immune systems.

I've known for years that gut dysfunction is a major contributor to brain dysfunction.

But I've also discovered that by tweaking their immune systems with carefully targeted, strain-specific probiotics, I can also treat their depression successfully.

A raft of large-scale, placebo-controlled clinical studies with humans is currently underway. I expect to see the markers for anxiety, chronic fatigue, depression greatly reduced — as well as the anxiety associated with irritable bowel syndrome and Crohn's disease.

Research has already linked a dysfunctional gut microbiome to Alzheimer's and Parkinson's disease, autism, immune-system disorders, chronic inflammation and type 2 diabetes.

But now, let's take a look at the kinds of “psychobiotics” I use to treat patients with psychological complaints...

Bacteria to Boost Your Brain

I'm frequently asked how long it takes to correct a dysfunctional microbiome that's impacting a psychological condition. My experience shows a significant change can take place in as little as six days if you use dietary protocol that includes the right “psychobiotics.”

But everyone is different. Your success will depend on the current state of your gut.

There are thousands of species of bacteria that make up the human microbiome. But I usually focus on five core species that have studied aggressively and are widely available.

Based on my experience — and the latest science — here's what I recommend:

1. **Lactobacillus plantarum:** Found in kimchi, sauerkraut, and other cultured vegetables. This “good bacteria” reduces gut permeability (leaky gut), which can cause many different types of brain disorders, including ADHD, depression and a number of neuro-developmental disorders. *L. plantarum* is also essential for fighting infection, controlling inflammation and battling dangerous bacteria.
2. **Lactobacillus acidophilus:** This is found in fermented dairy products like yogurt and kefir. It keeps bad bacteria in check, curbs yeast infections and combats pathogenic microbes. It also makes lactase, which is needed to digest milk. And it manufactures vitamin K1. *Without K1 your body can't make vitamin K2, and your body will be unable to clear away calcium deposits. As plaque continues to accumulate, your risk of heart disease and heart attack skyrockets.*
3. **Lactobacillus brevis:** Found in sauerkraut and pickles. It boosts your immune system by including enhancing killer T cell activity. *L. brevis* prevents the effects of certain gut pathogens and increases levels of the brain-growth hormone BDNF.
4. **Bifidobacterium lactis (also called B. animalis):** This is found in fermented milk products like yogurt. It boosts immunity, aids in digestive comfort, and knocks out foodborne pathogens like salmonella (which causes diarrhea).
5. **Bifidobacterium longum:** This is just one of 32 species that belong to the genus *bifidobacterium*. It's one of the first types of bacteria to colonize your gut at birth. It improves lactose tolerance, prevents diarrhea, food allergies, as well as the

proliferation of pathogens. *B. longum* is also known to have antioxidant capabilities and enhancing BDNF production. And some studies have shown *B. longum* can help suppress colon cancer tumors.

I recommend that you choose a probiotic with at least these five strains.

A good CFU (colony-forming unit) target to shoot for is at least 30 billion CFU per capsule. Most top probiotics need to be refrigerated, because these are living organisms. If you are buying online, they should be shipped to you in a cold pack.

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What Hillary Doesn't Know About Alzheimer's

You may have heard Hillary Clinton promise that if she becomes the next president of the United States, she'll pump \$2 billion a year into research to find a cure for Alzheimer's disease.

Too bad it won't work.

All politics aside, Hillary's proposal offers false hope to those afflicted with this dreadful disease — as well as their many long-suffering caregivers.

The problem is that the only ones who'll benefit from this investment are the drug companies. That's because most medical researchers are focused solely on the *genetic* causes of Alzheimer's — and, sadly, that means they're on the wrong track.

I remember President Richard Nixon's war on cancer some 45 years ago. It sounded like a noble goal at the time. But, as you know, it failed to produce a cure.

In fact, all it did was line the pockets of the pharmaceutical industry.

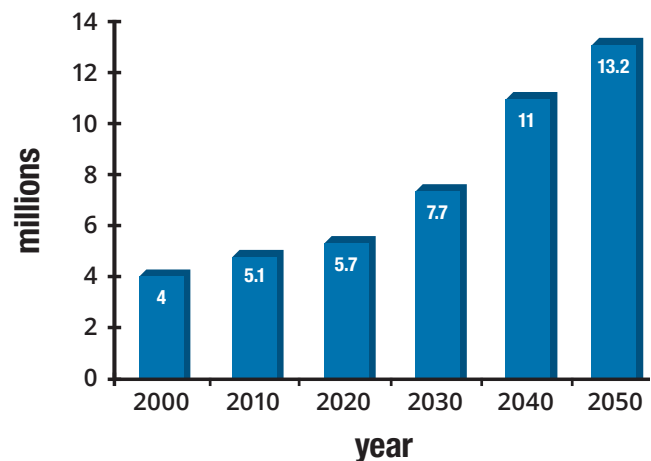
If Hillary becomes the next president, history will almost certainly repeat itself.

I'm not saying we shouldn't make the cure and prevention of Alzheimer's a national priority. But there's a better — and much less costly — way to deal with this insidious disease that affects one in nine people over the age of 65.

Mainstream medicine will tell you there is no known cure for Alzheimer's — and that its effects are irreversible.

Research at my clinic has not only uncovered the true cause of Alzheimer's disease, but also the

THE RISE OF AN EPIDEMIC



The number of Alzheimer's disease patients is expected to more than triple over the next 50 years.

steps you can take to significantly lower — or even eliminate — your risk of becoming one of its victims.

Let me explain...

Pinpointing the Source of Alzheimer's

As you probably know, Alzheimer's is a progressive brain disorder associated with acute memory loss, language problems and unpredictable behavior — predominantly among seniors.

The disease is named after its discoverer, Dr. Alois Alzheimer. It strikes when an accumulation of plaque causes the loss of connections between nerve cells in the brain.

There are two distinct types of this disease. Early-onset Alzheimer's disease occurs before the age of 60. It accounts for between 5% and 10% of all cases, and it runs in families.

But late-onset, or sporadic, Alzheimer's is the most common form of the disease. It strikes people after the age of 60 to 65, and only a very small percentage of these cases are genetic.¹

Sadly, this type of Alzheimer's has become so common you probably know someone who has it — if not someone near and dear to you.

But the sharp increase in sufferers is a relatively recent phenomenon.

That's because, unlike our ancestors, we're all victims of our toxic modern world — industrial pollutants, processed foods and other contaminants that didn't exist thousands, or even hundreds, of years ago.

There's a clear link between our increasingly poisoned environment and the surge in the number of Alzheimer's cases. I've seen it in my own research and science backs me up on it.

Today, nearly 44 million people suffer from Alzheimer's worldwide, with the vast majority in Western Europe and America. And that number is expected to more than triple to 134 million by the year 2050.

By contrast, Alzheimer's in Sub-Saharan Africa is rare.

So let's look a little more closely at this link between our poisoned environment and our altered food supply, and the terrifying spike in the number of late-onset Alzheimer's cases.

Over the past few decades, the increase of processed foods and hidden refined sugars in almost everything you eat has been exponential in the U.S. and Western Europe.

And you don't need to gorge yourself on junk food, candy bars and potato chips to damage your body — because refined sugars and processed carbohydrates are everywhere. They have so completely invaded the foods we eat today, you're probably not even aware of them.

Today, almost 30 million Americans suffer from diabetes, while another 86 million are prediabetic — and those numbers are surging daily.

At the Sears Institute for Anti-Aging Medicine, my research has revealed that diabetics have a significantly higher risk of developing Alzheimer's disease. And what's more, diabetic women are at even greater risk — which explains why two out of every three Alzheimer's sufferers are female.

I've uncovered evidence that high insulin levels in your body may be the determining factor in whether or not you're at risk of developing this dreadful disease.

There's a hidden connection between Alzheimer's and diabetes that may surprise you.

Is Alzheimer's Type 3 Diabetes?

There are compelling reasons why more and more researchers now refer to Alzheimer's as "type 3 diabetes."

Studies show a 300%-plus increased risk of vascular dementia and a near-200% increased risk of Alzheimer's in older people with type 2 diabetes.

In fact, studies reveal that around 75% of diabetics are more likely to develop Alzheimer's.²

And here's why...

After you eat, the increase in sugar in your bloodstream signals your pancreas to boost your insulin levels. This is how sugar is removed from your bloodstream and used by your body's cells for energy.

But here's the problem: If your body is subjected to years of excess sugar and glucose, your pancreas continues to secrete more and more insulin — until your body becomes overwhelmed and your cells fail to respond.

That's when insulin resistance occurs and the glucose in your bloodstream can't make its way into your cells.

The result is dangerously high blood sugar levels and, of course, full-blown diabetes.

But most mainstream doctors don't know that insulin also plays an important role in the formation of memories. Insulin enhances memory and learning.

You see, your brain makes up only 2% of your entire body mass. Yet 50% of glucose use in your body occurs in the brain.³

The majority of the glucose in your brain is converted to ATP energy so that your neurons can work properly and your memory remains intact.

So when insulin is deficient in your brain, the result is cerebral dysfunction, inflammation, oxidative stress, and an inability of your neurons to repair themselves.

Researchers have discovered the link between diabetes and Alzheimer's involves two types of peptides — chains of amino acids that form proteins.

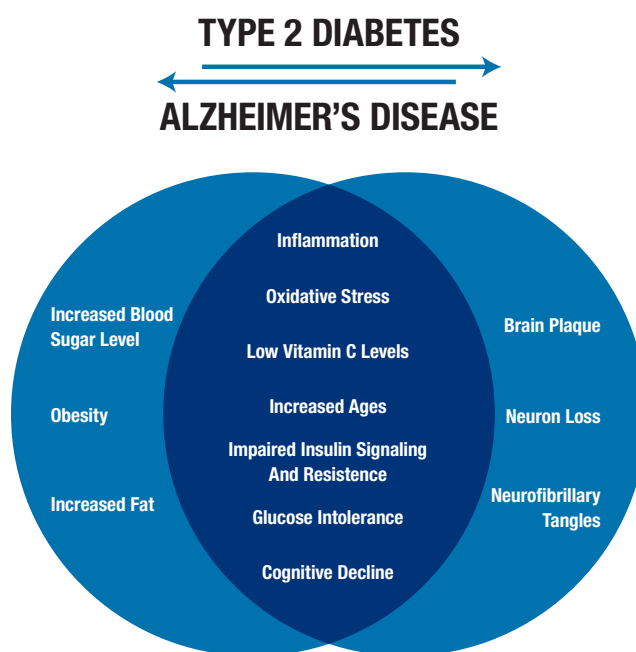
Deposits of **amyloid beta** and **amylin** — two peptides secreted by insulin as the hormone travels through the bloodstream — accumulate in the brains and pancreases of both diabetes patients and Alzheimer's sufferers, whose brains develop abnormal clusters of these protein fragments between the nerve cells.⁴

*We also know that amyloid beta produces brain cell-damaging toxins known as **oligomers**. These are responsible for causing Alzheimer's-related memory loss.*⁵

When these oligomers attach themselves to neurons, they knock out the nerve cells' insulin receptors. This causes **insulin resistance in the brain**.

And if glucose can't get into the cells, your brain is starved of the fuel it needs to function.

Diabetes causes even more oligomers to build up in the brain, and that makes your neurons even more insulin resistant.



The ominous connection between type 2 diabetes and Alzheimer's disease.

How Sugar is Starving Your Brain

Modern diet and lifestyle are wreaking havoc with your body. High intakes of refined carbohydrates, less physical activity, and the misguided avoidance of cholesterol and saturated fats has led to increased levels of glycation and oxidative stress in the brain.

Glycation occurs when you have sugar molecules in your system that attach to fats and proteins. All these sugars and processed carbs have transformed a natural biological process into mutant killer molecules called advanced **glycation end-products (AGEs)**. This causes protein fibers to become stiff and malformed.

High blood sugar levels create inflammation, further causing your brain's health to weaken.

Chronic high blood sugar hastens the death of healthy brain cells. Not only do brain cells shrink, but also the proteins in your brain cells to clump together, forming **neurofibrillary tangles**.

The formation of these amyloid plaques and neurofibrillary tangles contribute to the degradation

Stay Sharp With These Brain Boosters

You can improve your mental acuity and memory well into your golden years by adopting these simple habits:

- **Maintain a brain-healthy diet** – Commit to eating a healthy diet, free of sugary foods, sodas and processed carbohydrates. Your best choices include friendly fats and foods rich in omega-3s — such as salmon, walnuts and grass-fed beef.

You should also load up natural foods that are rich in antioxidants, key nutrients and minerals, like blueberries, raspberries, kale, spinach, avocados and other dark colored fruits and vegetables.

- **Get plenty of shut-eye** – Researchers at Johns Hopkins Bloomberg School of Public Health recently found that poor sleep patterns are linked to an increase in brain levels of beta-amyloid, which builds up to form the brain plaque found in Alzheimer's patients.
- **Exercise your body and mind** – Physical and mental health go hand-in-hand. My *PACE* exercise program helps boost your metabolism, which speeds sugar removal from the blood. This helps prevent type 3 diabetes and ultimately Alzheimer's disease.
- **Socialize** – A large University of Michigan study found that even 10 minutes of social interaction improved cognitive performance. Being part of a social network or community not only builds your confidence, self-esteem and sense of well-being, it also helps keep you mentally fit.
- **Reduce stress** – Studies reveal people who live stressful lives are about two to three times more likely to develop Alzheimer's disease than others. Patients with Alzheimer's have elevated levels of the stress hormone cortisol in their bloodstreams.

Some ways to reduce stress include, meditation, yoga, better time management and exercise.

of the brain cells and the development of Alzheimer's disease.⁶

But the good news is that you can restore damaged brain cells, promote healthy brain function and significantly reduce your chances of developing Alzheimer's disease.

By drastically reducing your sugar and carbohydrate intake and normalizing your insulin level, you can maintain a sharp mind and total recall now and throughout your golden years.

I recommend that carbohydrate should comprise no more than 20%-30% of your diet.

But there's much more you can do...

5 Keys to a Healthy Brain

Your brain is the most complex organ in your body.

It not only controls your senses and stores your precious memories, it also serves as the control center of your nervous system and manages all the other organs in your body.

What you feed your brain is just as important as what you feed the rest of your body.

I recommend the following nutrients to patients to help maximize their brain power but also to reduce the risk of Alzheimer's disease:

1. Chromium, cinnamon, and gymnema sylvestre:

These three nutrients counter the impact AGEs reducing blood sugar levels.

- **Chromium** removes glucose from your blood. When you eat sugar, your body utilizes its supply of chromium, so it's essential to your diet. A Canadian study found that chromium reduced fasting blood sugar levels as well as glycated haemoglobin (HbA1c), a common measure of blood-sugar control over a period of weeks and months.⁷

- **Cinnamon** enables your body to respond better to insulin. It contains methylhydroxy chalcone (MHCP), a polymer that balances your blood sugar and increases your body's energy stores. Studies show that cinnamon can reduce blood sugar by 29%.⁸
- **Gymnema sylvestre** is an herb used in Ayurvedic medicine in India — the oldest health system in the world. This herb slows the conversion of sugar to blood glucose.

I recommend supplementing with one to six grams of Ceylon cinnamon, 600 mcg of chromium polynicotinate, and 200-800 mg of Gymnema sylvestre per day.

2. **Coconut oil:** This has been shown to control and even reverse the progression of Alzheimer's. And the great thing is that coconut oil takes action on the brain after just one 40 ml dose.

When brain cells deteriorate because of insulin resistance and can no longer accept glucose, fatty acids in coconut oil, called medium-chain triglycerides, break down into *ketones* in the liver.

These provide an alternative fuel for the brain as efficient as glucose.

MCTs rapidly help boost brain metabolism and increase cognitive functioning. A recent study showed that patients experienced significant neurological healing after four-to-six weeks of including coconut oil in their nutritional plans.⁹

The great thing about coconut oil is that you can eat it by the spoonful or use it to cook. It also makes a good substitute for butter on your toast, for sugar in coffee and tea. And if you like to fry your foods, use organic, virgin coconut oil instead of vegetable oil.

3. **Beta-carotene and vitamin C:** Increasing your intake of antioxidants has been proven beneficial to optimizing neural function.

The vitamin C and beta carotene (a precursor of vitamin A) found in fresh fruits and vegetables like lemons, grapefruits, cranberries, carrots, kale and bell peppers also aid in the prevention of neurodegenerative diseases by combating brain-damaging free radicals.

I recommend 300 mg of beta-carotene. But for vitamin C, the daily intake of 60 mg recommended by mainstream medicine is not enough. Based on my own experience, I recommend 3,000 mg per day if you're in good health.

But in times of sickness, you can take up to 20,000 mg. A powdered form may be more convenient for larger doses or you can also opt for intravenous vitamin C therapy.

The **Sears Institute for Anti-Aging Medicine** offers IV nutrient therapy. For more information, please contact us at **561-784-7852**.

4. **Zinc:** This is the most abundant trace metal in the brain. It interacts with enzymes and proteins that are critical for cell survival. The depletion of zinc in your body causes problems for memory in the hippocampus area of the brain. Alzheimer's patients typically have low levels of zinc in their brains of AD.¹⁰

Zinc also plays a vital role in how neurons in the brain communicate with one another — affecting our memory and how we learn.¹¹

Good sources of zinc include oysters, grass-fed beef and lamb, spinach, pumpkin and squash seeds, cashews, dark chocolate, chicken, chickpeas and white mushrooms.

It's also easy to supplement with zinc. I recommend getting 30 mg of zinc per day.

5. **Omega-3s:** These essential fatty acids have anti-inflammatory properties that counter protein build-up and cognitive decline to improve brain function. And it causes brain cells to produce

more LR11, a protein that helps clear the amyloid protein, which is a cause of brain plaque found in Alzheimer's patients.

Most mainstream medical experts recommend eating two servings of oily fish a week. The best sources are mackerel, herring, salmon, trout and fresh tuna. This kind of diet should provide you with between 800 mg and 1,000 mg of those vital omega-3s a week.

But after years of tracking my patients' omega-3 levels, I know it's almost impossible to get enough from your diet.

Based on my experience, I recommend that you supplement. You need at least 500 mg of DHA omega-3s and about 60 mg of EPA omega-3s — EVERY DAY!

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Use Bali's Estrogen-Zapping Herb to Knock Out Pain... and Prevent Cancer

*Bali is an island of extraordinary beauty with a rich and unique herbal tradition. In fact, “Balian” is the local word for their healers. The island is actually named after them. Some of the plants they use are unknown in the West. My visits and research into Bali’s culture of healing resulted in my forthcoming book, **Healing Herbs of Paradise**. As a **Confidential Cures** insider, I’m delighted to be able to give you a sneak preview...*

Westi and Lelir (expert herbalists and friends) often cook with cengkeh. Most of us know this spice as cloves.

After I returned to the states from my original trip to Bali, I started doing research on the local plants and herbs they use there.

I found out about some new benefits of cloves that I’ll show you in a minute. But it was while doing research on a completely unrelated subject that I stumbled on something I hadn’t known before. It was during my research on ways to lower excess estrogen in the body that I found something modern medicine has overlooked.

Cloves can lower excess estrogen. This is extremely important in today’s world. Nearly every chemical we encounter, from pollution to pesticides to the ingredients in cosmetics, acts like estrogen when it gets into your body.

A Natural Antidote to Fake Estrogens

Too many fake estrogens have numerous negative consequences for the health of both men and women.



Cloves are harvested by hand on the island of Bali. This herb has the power to lower excess estrogen, which is extremely important in today’s toxic world.

Low libido, loss of muscle tone, fat gain and fatigue are just the start. At higher levels, estrogen is a known cancer-causing agent. It acts like radiation, producing extremely destructive free radicals and causes your DNA to “misfire” and produce the defects that are the beginnings of cancer. After certain estrogens break down, the quinines produced can also cause DNA errors.¹

Too much estrogen also decreases one of your body’s most powerful antioxidants, glutathione. This increases oxidative stress in your cells and can be an early step in cancer formation.²

Cloves are a natural antidote to the mess that excess estrogen can cause. Cloves have an important fake estrogen-zapping nutrient I want to tell you about, called eugenol.

Eugenol helps keep your body from absorbing estrogens, including the fake estrogens that seep into your body from our chemical world. The eugenol in cloves helps your stomach convert these fake estrogens into harmless compounds and eliminate them from your body.

Clinical studies on how your stomach gets rid of toxins like synthetic drugs and fake estrogens show how eugenol helps. It stimulates an enzyme in your stomach that converts chemicals and foreign substances — especially fake estrogens — to a water-soluble form that your body quickly flushes out.³

This is one of the most important health benefits of cloves... but far from the only one. Westi told me a bit about the traditional Balinese uses for cloves, one of which his father showed him when Westi was very young:

Sweet-Smelling Insect Repellent Also Eases Back Pain

(Syzygium aromaticum)

Balinese name: *Cengkeh*

Speaker: *Westi*

*The water was halfway up my father's shins...
which means it came almost to the top of my legs.*

*It was cold — bone-chilling cold. All around us
rose young rice shoots.*

*Father was bent over, carefully tending the rice
plants... finding weeds and pulling them by hand,
careful not to disturb his crop. He stood up slowly,
painfully, pushing up on his thighs with his palms
to take some of the burden off his back.*

*He looked at me as I “helped” him, now and then
pulling a weed here or there. I was too young to be
much real help, but at least I was some company.*

*“Westi,” he said as he gazed up at the terraced
hills above us, “it used to be much harder to grow
rice.” He swept his hand toward the seemingly
endless green terraces. “Once, all these paddies*

*gave us just one harvest each year. But since the
government gave us fertilizers and insecticides, we
can grow two crops.”*

*He winced and placed his hand on his lower back.
“Now we have much more rice to sell,” he continued,
“but our backs never get a rest. I’ll be glad to get
home tonight. I need your mother’s boreh.”*

Then he went back to his weeding.

*“Boreh” is what we call our traditional mixtures
of herbs and spices that we use externally. Balinese
women apply boreh to their husbands’ backs and
joints to ease the aches caused by working in the
rice fields all day. Its natural heat soothes sore
joints and muscles, headaches and rheumatism.*

*One of the most important spices Lelir uses in her
boreh is cengkeh — cloves.*

*You wouldn’t know it to look at the cloves you buy
in a store, but they actually come from a tree.*

*It’s an evergreen, but it doesn’t have needles like a
fir tree. Instead, it has dark green, tapered leaves,
tinged with red.*

*Clove trees smell heavenly. Like so many of our
neighbors, Lelir and I have clove trees in our
garden at home.*

*But the scent of our clove trees is nothing compared
to the scent in the northeast of Bali. Entire jungles
of clove trees grow there... along with cinnamon,
candlenut, nutmeg and vanilla. I don’t think
anywhere else on earth smells quite so lovely as
this corner of Bali.*

*Long ago, European empires battled over the
spices grown in Bali and the surrounding*

*“Spice Islands.” Great Dutch and Portuguese
sailing fleets loaded up with the spices grown here
and brought them back to Europe, where they were
in great demand.*

Today, Indonesia is independent, and farmers on Bali can grow and sell spices to support their own families, just as Lelir and I do.

Lelir and I grow many of our own spices. But we also buy spices from small farmers all over Bali. Some we use to make the cosmetics and other products we sell in our shops. But much of what we buy, we combine and sell to restaurants and other companies.

Each small farmer doesn't grow enough spices to sell commercially. But when we combine the output of many small farmers, we have enough. So we can help our neighbors by finding a market for their crops this way.

Here is how cloves go from flowering trees on Bali to your table...

When the cream-colored flowers of the clove tree lose their stamens (the pollen-producing rods in the center), purple berries develop. These berries eventually dry and turn brown. What are left are the familiar cloves you find in your supermarket.

Balinese herbalists value cloves highly because they have so many uses. We extract the essential oil from the flowers, leaves and stems. This oil is a safe and effective antiseptic. You can also soak a piece of cotton in the oil and apply it to a tooth to stop a toothache.

Sometimes neighbors come to us when their children are sick. If the child has a stomach ache with spasms, we tell the parents to use clove oil. We have them heat a little of the oil and gently massage it on the child's belly. Pretty soon, the spasms stop.

Of course, we use cloves in cooking, too. It not only has a delicious flavor, it also aids digestion.

Lelir and I use cloves to protect against ulcers.

Here in Bali, the rainy season lasts about two-thirds of the year — from September to April. With all the rain — and all the rice paddies — mosquitoes can be a real problem.

But clove oil makes an effective insect repellent. Just spread a little of the aromatic oil on your skin, and it will keep mosquitoes away for a couple of hours. And because it's an oil, it clings to your skin when you get wet.

My Own Research and Discoveries

We've learned this is another traditional use for cloves that's been studied. Scientists in Thailand tested several essential oils as insect repellents and discovered that clove oil worked best. In their experiments, it kept mosquitoes away for up to four hours.⁴

Studies have also shown that Balinese wives are smart to include cloves in their boreh. Animal tests at the University of Florence in Italy revealed that a compound in clove oil has an anesthetic effect.⁵ In other words, it dulls the feeling of pain.

The eugenol in clove oil also stimulates the stomach lining to produce more protective mucus, helping to relieve ulcers, just like the Balinese have known for hundreds of years.

Cloves don't have much in the way of vitamins, with the exception of one: vitamin K.

Most doctors overlook the critical role vitamin K plays in your body.

It can help prevent liver cancer.⁶ And in a study published in the *Journal of Cancer Research and Clinical Oncology*, vitamin K killed leukemia, pancreatic and ovarian cancer cells.^{7,8} It does this by programming cancer to "self-destruct."

Cloves can also help keep your blood sugar under control. As part of the Framingham Heart Study, researchers found that people with the highest levels of vitamin K had better insulin sensitivity and lower blood sugar than people with the lowest vitamin K.⁹

Better than Most Multivitamins

Cloves are also filled with fiber and minerals and nutrients like potassium, calcium, magnesium and iron. Just a couple of tablespoons will give you 10% of what you need every day.¹⁰ That's more than what you get with many big-name multivitamins!

In our westernized world, antioxidants are still the best way to guard against disease.

That's because any time you increase your intake of antioxidants, you're saving your healthy cells from damage.

Spices, herbs and teas are surprisingly powerful antioxidants. And cloves are the most powerfully antioxidant food ever measured.

Cloves have an ORAC value (that's Oxygen Radical Absorbance Capacity, a measure of how well a food can clean up free radicals) that is through the roof. More than 315,000.¹¹ That's the highest of any food in the world. For comparison, garlic is around 6,000, broccoli is around 3,000.

Here is What I Recommend

The best way to use cloves is to add them for flavor to one of the many teas I describe in this book, add them to mulled apple cider or wine, or make clove tea.

You can buy culinary cloves whole, as they are the dried flower buds of the clove tree, or you can get them in the ground form.

I like whole cloves because they have more flavor... and I can grind them myself on the spot if I want to. I don't recommend clove powder because it doesn't stay fresh for very long. So, as I need cloves, I just put the whole buds in my portable coffee grinder and make only as much as I need at a time.

I also use clove buds and flowers the way I was taught by Lelir. Every month or so, I make a body

scrub that's very invigorating and detoxifying. In Bali, the Balians and traditional herbalists call these kinds of mixtures "boreh."

The original boreh recipes came to Bali many centuries ago. Like many traditions on Bali, they arrived through the many wars and refugees from the surrounding islands. These recipes have been handed down through the many generations of Lelir's family as they added to the recipes with unique Balinese herbs, and subtracted those that did not grow locally.

Lelir's Boreh Recipe

Lelir makes her own boreh recipe like a good ol' fashioned cook would: she does it "by eye."

A pinch here and a handful there... so I can't tell you exact amounts.

But what you do is:

- Chop a medium ginger root and a medium galangal into pieces small enough to crush.
- Using a large mortar and pestle, crush the chopped roots with 3 pieces of cardamom.
- Add and crush together some coriander, nutmeg and clove bud and flowers.
- Add rice (Lelir uses a mixture of red and white rice) and crush with spices.
- When all ingredients are thoroughly crushed, mix in a little water.

Lelir's Balinese Body Scrub

Lelir's unique Balinese body scrub is mostly used for sore muscles and joints.

You should not use boreh on your face or internally, but it has many other uses...

- For headache, apply a little scrub to the center of the forehead and on the temples.

- For flu, apply behind the earlobes and along the base of the back of the neck.
- For chest coughs, apply to the center of the chest.
- For backache and to soothe sore muscles and joints, apply to shoulders, back or wherever soreness occurs. This is especially effective with acupressure or after a deep massage session.

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The information provided in this letter is for educational purposes only and any recommendations are not intended to replace the advice of your physician. You are encouraged to seek advice from a medical professional before acting on any recommendations in this publication.



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Al Sears, MD, CNS, is a medical doctor and one of the nation's first board-certified anti-aging physicians.

As a board-certified clinical nutritionist, strength coach, ACE-certified fitness trainer and author, Dr. Sears enjoys a worldwide readership and has appeared on more than 50 national radio programs, ABC News, CNN and ESPN.

In 2010, Dr. Sears unveiled his proven anti-aging strategies in ***Reset Your Biological Clock***. As the first U.S. doctor licensed to administer a groundbreaking DNA therapy that activates the gene that regulates telomerase, Dr. Sears made history by bringing telomere biology to the general public.

Dr. Sears shocked the fitness world by revealing the dangers of aerobics, "cardio" and long-distance running in his book, ***PACE: The 12-Minute Fitness Revolution***.

In 2004, Dr. Sears was one of the first doctors to document the true cause of heart disease and expose the misguided and often fatal drugs-and-surgery approach to heart health.

In ***The Ageless Heart Manual: Advanced Strategies to Reverse Heart Disease and Restore Your Heart's Pumping Power***, Dr. Sears outlines the easy-to-follow solution that effectively eliminates your risk of heart disease, high blood pressure and stroke.

An avid lecturer, Dr. Sears regularly speaks at conferences sponsored by the American Academy of Anti-Aging Medicine (A4M), the American College for the Advancement of Medicine (ACAM) and the Age Management Medicine Group (AMMG).