The Blaylock Wellness Report
Living a Long, Healthy Life
Edited by Russell L. Blaylock, M.D.
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Key Points

- Glutamate consumption dangerously "excites" the brain
- Inflammation acts like a smoldering fire
- Toxic metals accumulate in the brain
- Soy is not a healthy dietary alternative
- Special Report: New insights on NFL concussions

PLUS

- Omega-3 oils can prevent cell death
- Studies give new hope for living to 100

ASK DR. BLAYLOCK

- Boost your immunity and avoid adult vaccines
- "Disembarkment sea legs syndrome" can be treated with magnesium

Don't Let Hidden Inflammation Impair Your Brain

The human brain is one of the most marvelous creations in the universe, far more intricate and complex, and indeed more powerful than anything man can create. **These days, we hear a lot about the wonders of human design, including artificial intelligence and machines that can think — still, nothing comes close to the complexity of the human brain.**

After spending my entire professional life studying the brain and reading the research of people much smarter than me, I can assure you of the truth of that statement.

When I was a young neurosurgery resident, I saw a man who had suffered a very small stroke deep inside his brain. The damage to his brain was, in fact, so small that it could be seen only by the trained eye. Yet as a result of the stroke, the limbs on the right side of this man's body writhed uncontrollably, especially when he tried to walk or pick up an object off the ground.

It was then that I realized what a truly incredible organ the brain is; the very idea that the brain can make our every movement smooth and graceful and allow us to walk and grasp objects effortlessly is truly a wonder of God's creation.

Now that I have retired from active neurosurgical practice, I spend more time researching how the brain works in greater detail. **In this issue of The Blaylock Wellness Report, I will share some of that research, including what happens when the brain is injured, how it responds to inflammatory chemicals released as the result of immune reactions, what happens when the brain ages, and how a proper diet can curb the harmful effects of this immune response.**

The Root Cause of Brain Problems

The concept of "excitotoxicity" — cell death and ensuing reactions — is relatively new in the field of neuroscience, and even many practicing neurologists and neurosurgeons know little if anything about the process. Yet it is crucial to any discussion of the brain.

The study of this important process began when a neuroscientist named John Olney came across an article written in 1957 by an

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ophthalmology resident. That resident had conducted an experiment with the food additive monosodium glutamate (MSG) to see if it would improve vision in animals.[1]

The resident supposed that glutamate, the main component of MSG, might provide nutrient fuel for the retina of the eye. But rather than protecting the retina, glutamate caused widespread destruction of the nerve cells in the animals' eyes.

Dr. Olney repeated the study about 10 years later, and found that MSG not only destroyed the nerve cells of the retina, it also damaged some very important parts of the animals' brains.[2]

Olney then exposed neurons in culture dishes to small concentrations of MSG. After about an hour, the cells suddenly died. Olney had noticed that MSG caused the brain cells to fire electrical impulses very rapidly until eventually they died. **He named this process of cell death "excitotoxicity," referring to the electrically excited state of the neurons (excito) and the poisoning effect of the process (toxicity).**

Excitotoxicity affects many aspects of overall brain health:

- Brain aging
- Brain injury
- Strokes
- Infections of the nervous system
- Mood disorders
- Addictions
- Developmental malformations of the brain
- Neurodegenerative diseases

Excitotoxicity also explains how many poisons, such as pesticides, herbicides, heavy metals, and other brain-toxic substances cause their damage.

The Dangers of Glutamate

Since this early discovery, scientists have learned that glutamate is one of the brain's most abundant neurotransmitters — chemicals that the brain uses to communicate between cells. Most people have heard of other neurotransmitters, such as acetylcholine, serotonin, dopamine, and epinephrine.

However, glutamate receptors are responsible for 90 percent of the communication in the brain's cortex, where most of the cells are located, and 50 percent of the brain's total communication. This far exceeds all of the brain's other neurotransmitters.

Glutamate's main function, not surprisingly, is to "excite" the brain — that is, to keep us awake and attentive. It also plays a critical role in our ability to learn and remember, and regulates our moods.

Yet despite being the main neurotransmitter, glutamate is also dangerous to the brain's health. Even extremely small concentrations of glutamate in the wrong place (outside the cells) in the brain and spinal cord can destroy huge numbers of neurons and synapses, the connections between brain cells.

For this reason, the brain has a very complex series of mechanisms to keep the amount of glutamate outside of neurons very low. There are also many types of glutamate receptors that allow different parts of the brain to react differently to glutamate under varying conditions. This system allows the brain to regulate glutamate activity.

Studies show that the damage produced by an ever-growing list of neurological conditions is triggered by a rise in brain glutamate or over-sensitivity of glutamate receptors. Excitotoxicity is now suspected to be a major player in:

- Brain infections (meningitis and encephalitis)
- Autoimmune brain diseases (multiple sclerosis)
- Mercury poisoning
- Aluminum toxicity
- Alzheimer's dementia
- Parkinson's disease
- ALS, or Lou Gehrig's disease
- Huntington's disease

Today, most articles written about the brain, and especially about brain diseases, discuss excitotoxicity as an important process. Still, most doctors have never heard of it, and it is almost unknown among the general public.

Your Brain, Inflamed

In a series of articles starting in 2008, I introduced a new term to neuroscience literature — **immunoexcitotoxicity**[3-7] — which refers to the aggravation of the inflammatory process by the activation of the brain's excitotoxic system.

It is known that when the brain is disturbed by anything — from infections to trauma, poisons, or stroke — it becomes inflamed. This inflammation is caused by activation of immune cells in the brain called **microglia**.

Researchers found that damaged brains released

large amounts of glutamate, which also came from the microglia. Recently, it has been shown that immune chemicals, called cytokines, can increase the sensitivity of glutamate receptors — even in the case of minor head injuries.

Likewise, excess glutamate activates more microglia; this in turn worsens the inflammation. This interaction between inflammation and excitotoxicity plays a major role in brain injuries. Immunoexcitotoxicity describes this interaction between the brain's immune response and excitotoxic reactions.

In fact, immunoexcitotoxicity is a major process in many neurological disorders, and may be a general mechanism for explaining them all.

What Happens As We Age?

When we are young, our brains are constantly changing, creating billions of new synaptic connections, sprouting new dendrite branches, and generally reorganizing to function more efficiently. This process is called brain plasticity.

Even in the recent past, it was assumed that as human beings aged, our brains began to shrink (atrophy), and that as we lost brain cells, we began to lose our ability to function — especially the ability to learn and remember. It was also assumed that as we age, we lost the process of brain plasticity.

But newer studies have found that, in fact, we lose relatively few brain cells as we age, and we retain the ability to reorganize and grow new brain connections even into old age. One study that examined the brains of people 100 years old, and older, found evidence of ongoing brain plasticity.

Studies in which researchers examined people's ability to perform complex thinking tasks found that older people even had an advantage over younger people, because older people had more complexly organized brains. The major difference was that younger people could think faster.

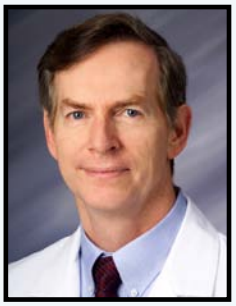
But despite this good news, there's bad news too. A number of studies have shown that as people age our brains become more inflamed.

This happens because the microglia become activated or primed (a state just short of full activation). In most people, this is of no real consequence. However, in some it can lead to depression, confusion, disorientation, and even suicidal thoughts, because microglia release inflammatory chemicals (called cytokines and chemokines) and excitotoxins such as glutamate, aspartate, and quinolinic acid. These chemicals have been associated with behavioral problems.

In a small number of older individuals, this inflammation becomes more intense. In these cases, the inflammation acts like a smoldering fire that spreads throughout the brain over the course of many years, even decades.

These unfortunate people will begin to notice a loss of memory — though not as severe as Alzheimer's disease. We call this **age-related**

About Dr. Blaylock



Dr. Russell Blaylock is a nationally recognized, board-certified neurosurgeon, health practitioner, author, and lecturer. He attended the Louisiana State University School of Medicine in New Orleans and completed his internship and neurosurgical residency at the Medical University of South Carolina in Charleston, S.C. For 26 years, he has practiced neurosurgery in addition to having a nutritional practice.

He recently retired from his neurosurgical duties to devote his full attention to nutritional studies and research. Dr. Blaylock has authored four books on nutrition and wellness, including "Excitotoxins: The Taste That Kills," "Health and Nutrition Secrets That Can Save Your Life," "Natural Strategies for Cancer Patients," and his most recent work, "Cellular and Molecular Biology of Autism Spectrum Disorders," edited by Anna Strunecka. An in-demand guest for radio and television programs, he lectures extensively to both lay and professional medical audiences on a variety of nutrition-related subjects.

Dr. Blaylock has been appointed to serve on the Scientific Advisory Board of the Life Extension Foundation. He is the 2004 recipient of the Integrity in Science Award granted by the Weston A. Price Foundation. He serves on the editorial staffs of the Journal of the American Nutraceutical Association, Surgical Neurology International, and the Journal of American Physicians and Surgeons, official publication of the Association of American Physicians and Surgeons. He is also a lecturer for the Foundation on Anti-Aging and Regenerative Medicine.

Dr. Blaylock previously served as clinical assistant professor of neurosurgery at the University of Mississippi Medical Center in Jackson, Miss., and is a visiting professor of biology at Belhaven University, also in Jackson.

memory loss. Some doctors consider it a prelude to full-blown dementia, though others feel it may never progress that far in most people.

Studies have clearly shown that people with age-related memory loss have higher levels of glutamate and inflammatory markers in their brain — but not necessarily in their blood. This is important, because blood lab tests can suggest everything is just fine when in truth the brain is on fire.

This may seem rather confusing, but it has been well-demonstrated: The brain can be inflamed without the body being inflamed. However, an inflamed body can trigger brain inflammation, and those who have elevated blood inflammatory markers, such as CRP, are at an even higher risk of dementia and age-related memory loss.

Inflammation Creates a Vicious Cycle

This chronic, smoldering brain inflammation has a number of negative effects on brain function. For example, it dramatically increases levels of free radicals and lipid peroxidation products, which impair the ability of brain cells to make energy.

The principal source of this vital energy is mitochondria — the small energy factories within every cell that supply 95 percent of all energy. The brain requires more energy than any other organ, consuming 25 percent of the glucose and 20 percent of the oxygen in the body — even though it makes up only about 5 percent of body weight.

As we age, our mitochondria begin to lose some of their ability to produce energy. This not only deprives the brain of energy, it has been shown to greatly magnify the damaging effects of excitotoxicity, thus setting off a vicious cycle that robs the brain of even more energy.

The most energy-hungry parts of the brain control our memory, learning ability, and behavioral control. This explains why older people can become forgetful or cranky and sometimes do socially inappropriate things: Their control systems are not working up to par.

This age-related rise in brain glutamate and inflammation also explains why depression, anxiety, panic attacks, and suicide are more common among older people.

It also explains why people who have spent years looking after sick spouses often develop the same brain degenerative diseases: The stress associated with caring for a sick loved one triggers brain inflammation and glutamate release, the very things that cause dementia. It also explains the high incidence of stroke and heart attack deaths in these spouses, as both are related to chronic inflammation.

With progressive aging, immunoexcitotoxicity continues, and other symptoms can arise as well:

- Extreme fatigue
- Confusion
- Difficulty thinking clearly
- Loss of balance
- Tremors
- Muscle spasms
- Aches and pains

Some of these symptoms come from inflammation and excitotoxicity in the brain, while others are due to inflammation and excitotoxicity within the body. **Ironically, research indicates that glutamate is a problem not only for the nervous system, but for virtually every tissue and organ in the body. This makes sense, as glutamate receptors exist everywhere in the body.**

Scientists are now investigating glutamate excess in such disorders as arthritis, muscle pains (fibromyalgia), atherosclerosis, osteoporosis, cancer, diabetes, and autoimmune diseases — all of which are aggravated by eating high-glutamate foods.

Alzheimer's: Smoldering Fire Becomes a Roaring Flame

Normal aging is associated with a gradual increase in inflammation in the brain and a gradual increased sensitivity to excitotoxicity. The degree of this immunoexcitotoxicity varies considerably from person to person; some people are only slightly affected while others are highly affected.

Some people have exceptionally high levels of brain immunoexcitotoxicity. They are destined to develop neurodegenerative diseases such as Alzheimer's or Parkinson's. Their inflammation is much greater than what is seen with normal aging.

Remember that this brain inflammation is like a smoldering fire. And like a campfire, that smoldering can suddenly rise up into roaring flames. At age 50, the risk of developing Alzheimer's is less than 1 percent. However, at age 65 it climbs to 2 to 3 percent, and by age 75 the risk of Alzheimer's is 15 to 20 percent. After 80, the risk is almost 50 percent.

Why would this be? There are a number of reasons. For one thing, throughout our lifetimes, we are exposed to a great number of toxic substances. It has been estimated that 100,000 chemicals have been added to the environment, most of which have never been tested for safety.

We know that many of these chemicals trigger immunoexcitotoxicity in the brain. Commonly used chemicals, stored in millions of garages, are sprayed on lawns, golf courses, and farms every day. These chemicals are found in the bodies of people in every part of the world.

Recent studies have shown that the pesticide rotenone and the fungicide maneb can activate inflammatory cells in the part of the brain linked to Parkinson's and cause these cells to release excitotoxins. Farmers using these agents have higher incidence of neurodegenerative diseases such as Alzheimer's, Parkinson's, and Lou Gehrig's disease.

Stay Away From Toxic Metals

At an ever-increasing rate, we are being exposed to a wide range of brain-toxic metals:

- Mercury
- Aluminum
- Fluoride
- Cadmium
- Manganese
- Lead

Over time, these metals accumulate in the brain and trigger long-term inflammation. Both mercury and aluminum have been linked to risks of Parkinson's, Alzheimer's, and ALS. Mercury is found in the atmosphere and in some seafood.

But mercury comes mainly from vaccinations. Even though ethylmercury (thimerosal) has been removed from most childhood vaccines, it is still in the flu vaccine. This form of mercury is one of the most toxic to the brain.

Aluminum contamination comes mainly from foods such as processed cheeses, black tea, and soybeans. In addition, any food made with baking powder, such as biscuits, pancakes, and many breads, also contain aluminum. (You can buy aluminum-free baking powder, but manufacturers do not use it.) Food and drinks packaged in aluminum cans may also be contaminated, especially if they are acidic.

Never wrap foods in aluminum foil, and absolutely never cook in aluminum cookware, even if it is coated, as the coating eventually gets scratched.

However, the leading source of aluminum contamination today is vaccines. This metal is used as an adjuvant (an immune-boosting agent) in most vaccines. But it has been shown to travel to the brain and accumulate in brain cells.

There is compelling evidence that this accumulation of aluminum damages the developing brain and increases the risk of neurodegenerative diseases in adults. With the great number of vaccines now being proposed, the aluminum concentration being injected has been shown to be as much as 50 times higher than what is considered safe.

A new disorder, called **macrophagic myofasciitis**, is strongly related to the high aluminum content in two vaccines — the hepatitis B vaccine and the tetanus vaccine. Those affected have a higher risk of developing multiple sclerosis, severe muscle pains, intense weakness, and debilitation.

Viruses Can Hide in the Brain

We are also exposed to a number of infections throughout our lives. Unfortunately, some of these infectious organisms can take up lifetime residence in the brain, causing chronic inflammation that may worsen as we age.

One such organism is the herpes simplex virus, which is often found in the brain ganglion (nerve cells). People who have recurrent attacks of herpetic mouth sores are at higher risk of developing Alzheimer's. Most people also harbor a virus called the cytomegalovirus in their nervous systems. There are no vaccines for any of these viruses.

Ironically, the measles virus can also hide in the brain. In one study, researchers autopsied the

It's a No-Brainer — Exhaust Fumes Are Toxic

Exhaust fumes from motor vehicles are a powerful brain toxin, especially the fine particulate matter fumes like those emanating from diesel engines. A growing number of studies have shown that people living in heavily polluted cities have a much higher risk of neurodegenerative diseases. In fact, studies of dogs living in polluted cities showed the same changes in their brains as are seen in Alzheimer's dementia.

I have often thought that people who fly frequently are at great risk, because the particulate matter from airplane fuel is especially harmful to the brain. Standing in the tunnel waiting to board the plane reeks of this fuel odor.

I also worry about joggers and bicyclists who use city streets, because they are at a high risk — when they become fatigued, they have lower oxygen levels while breathing these motor fuel fumes.

brains of elderly people and found that 30 percent contained live measles viruses. This means that **large-scale vaccinations of children with the MMR vaccine (measles, mumps, and rubella) will actually increase the number of people who have live measles viruses in their brains. Measles viruses can mutate into a brain-damaging form, as was seen in autopsies.**

There are also problems with vaccinating elderly people with a number of new vaccines, such as the pneumococcal vaccine and the yearly flu vaccine. Studies have shown that neither of these vaccines reduces hospitalizations, deaths, or pneumonia in the elderly. Yet there is compelling evidence that these vaccinations increase the risk developing a neurodegenerative disorder.

Now let's consider one of the greatest risk factors — your diet.

The High Cost of a Bad Diet

In the West, people eat very unhealthy diets, even when they think they are eating healthy. As I scan the literature, I see a lot of bad advice for "healthy" lifestyles, especially among many popular diets. I constantly tell people that it's not supplements that will promote health. It is mainly what you eat.

Most people, especially in the U.S., don't understand why we eat — that is, why our brains signal that we are hungry. It's not to impart pleasure. In fact, pleasure is merely a byproduct so you will not neglect to eat altogether.

Rather, we eat to supply our bodies with the essential nutrients it needs to function and protect itself. Most American diets contain very few healthy nutrients and a lot of very damaging substances.

For one, the average person is eating foods cooked in harmful vegetable oils including:

- Corn oil
- Safflower oil
- Sunflower oil
- Peanut oil
- Soybean oil
- Canola oil

People are often shocked when I include canola on the list of bad oils. But it belongs there. All of these oils worsen brain and spinal cord injuries and increase the risk of Alzheimer's.

The reason is that all of these oils are polyunsaturated, a chemical term meaning that not all the chemical bonds are occupied by hydrogen. This makes these oils very powerful inflammation agents that worsen excitotoxicity.

When you cook with these oils — even canola oil — they become oxidized, making them very caustic to the body. This is what causes inflammation.

The same applies when using them as salad dressings. Exposing these oils to the air causes them to oxidize. It is the oxidation of oils that is most strongly linked to atherosclerosis.

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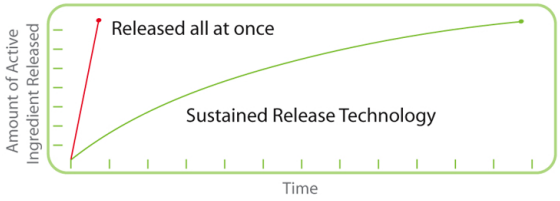

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The Dangers of Sugar

Another pair of culprits in our diet are sugar and high-glycemic foods, which convert to sugar easily. These foods include white rice and potatoes.

Americans consume massive amounts of sugar, especially high fructose corn syrup. While the brain uses sugar as fuel, when excess sugar is consumed it becomes a very strong toxin, increasing inflammation throughout the body, but especially in the brain.

People suffering from reactive hypoglycemia are at a special risk. When these people eat high-sugar diets or high glycemic diets, within about an hour their blood sugar falls rapidly and then slowly rises back to normal. The repeated rising and falling of their blood sugar triggers excitotoxicity and increases brain inflammation — that is, it triggers immunoexcitotoxicity.

The number of people with reactive hypoglycemia is increasing drastically as we consume more and more sugar. It is estimated that as much as 40 percent of the U.S. population has this condition.

Ignore the Hype — Soy Is Not A Healthy Alternative

Soy is the latest food fad to sweep the country, driven by the soy processors and their government handmaidens. But is soy really good for you?

One of the longest and best-conducted studies on the effects of soy consumption — involving yearly CT brain scans of subjects — found that those who ate the most soy foods had a dramatically higher incidence of brain shrinkage and dementia compared to those who ate the least or none at all.

It has been shown that soybeans naturally have high levels of glutamate, manganese, fluoride, and aluminum, all of which are brain toxins. Yet because of massive propaganda campaigns by so-called health authorities, women, in particular, are consuming large amounts of soy-containing foods and drinks.

These women think that they are reducing their risk of breast cancer. In fact, studies have shown that in women who have had or currently have breast cancer, soy increases the growth of their cancers.

Of special concern is the high manganese content in soy products, particularly soy milk and baby formula. In babies, manganese can cause damage to critical areas of the developing brain. In older adults, it can worsen damage to the parts of the brain responsible for Parkinson's disease.

The fluoride and aluminum in soy combine to form a compound that damages brain cells and other organs — especially the thyroid. A friend and colleague of mine from the Czech Republic, Dr. Anna Strunecka, has conducted extensive research on the toxicity of aluminofluoride.[8,9]

Diet Is Key to Protecting Your Brain

So how can you protect yourself from immunoexcitotoxicity? Again, diet is the key.

In general, people want to continue their bad habits and take a "pill" that will allow them to do so. But if you continue to eat a poor diet, all the supplements in the world will not prevent immunoexcitotoxic disorders.

Blenderizing nutrient-dense vegetables and berries is also important. By doing this, you can absorb a higher percentage of the nutrient flavonoids from those foods.

Simply eating vegetables allows only about 20 to 30 percent of the nutrients to be absorbed. Blenderizing raises that number to 80 to 90. Also, by using "green juice" produced from blenderizing, you get a combination of vitamins, minerals, fiber and flavonoids, all of which reduce inflammation in the body, and many of which reduce excitotoxicity.[10]

Here are some of the most effective supplements and plant extracts to reduce immunoexcitotoxicity:

Curcumin. This extract of the spice turmeric commands first place as a brain protector for its ability to suppress the cell protein NFkB.

Another way curcumin protects the brain is by binding free iron and preventing it from becoming toxic in the brain. Curcumin also reduces the brain toxicity of mercury and aluminum. It has been shown that mixing it with extra-virgin olive oil increases gut absorption 11-fold and brain uptake fourfold. It has a high safety profile even when taken in doses of 10,000 mg a day. The protective dose is 500 mg three times per day.

Quercetin. Like curcumin, this is a powerful anti-inflammatory that inhibits NFkB activation, thereby suppressing inflammation and excitotoxicity. Absorption is increased by dissolving in extra-virgin olive oil. You can mix it with the curcumin. The usual dose is 250 mg three times per day.

Food for Thought — Eat Your Vegetables

Vegetables and fruits contain a great number of very powerful brain-protecting elements, including vitamins, minerals, and flavonoids. In combination, these substances produce tremendous protection from damage.

Cells, especially brain cells, have many protective mechanisms that are dependent on vegetable ingredients to work properly. The flavonoids, for instance, regulate neuron signaling — that is, they control special chemical messengers that tell the cell what it needs to do to protect itself.

One of the major ways certain vegetables protect the brain is by regulating a cell protein called NFkB, which also regulates and controls inflammation. NFkB, when activated, moves to the nucleus of the cell and turns on a number of genes that trigger inflammation.

Many vegetable flavonoids suppress NFkB activation, which not only prevents brain inflammation, it also suppresses the growth and invasion of cancers and protects the brain from immunoexcitotoxicity. Here are just some of these powerful flavonoid inhibitors:

- Curcumin
- Quercetin
- Luteolin
- Apigenin
- Resveratrol
- Hesperidin

Resveratrol. Like the two anti-inflammatories curcumin and quercetin, it also acts on a number of inflammatory pathways in brain cells to reduce inflammation, shut off harmful microglial activation, and promote cell-protection mechanisms. The dose is 100 mg twice per day. Higher doses may have harmful effects.

High gamma-tocopherol vitamin E. Vitamin E has been shown to reduce inflammation and excitotoxicity — especially the form that has the high gamma-tocopherol component. A related vitamin E component called mixed tocotrienols also protects the brain from immunoexcitotoxicity. That should be taken at a different time of day than the high gamma-tocopherol E, because they inhibit each other's beneficial effects. The dose is 400 to 800 IU of high gamma-tocopherol E, and 100 mg of the tocotrienols per day.

Buffered vitamin C (calcium or magnesium ascorbate). Aside from being an important antioxidant, vitamin C increases brain dopamine levels, improving mood and motivation. It also supplies energy to the brain and inhibits excitotoxicity. The dose is 1,000 mg three times per day between meals.

Magnesium citrate/malate. Magnesium is a very important mineral for overall brain protection. Unfortunately, most physicians do not know this and rarely give it to patients. Magnesium regulates one of the most important types of glutamate receptor, preventing excessive excitotoxicity. It is also a potent anti-inflammatory. The best way to take it is 500 mg of the time-released form, twice per day. Citrate and malate act as a metabolic fuel for the brain.

Medium chain triglycerides (MCT oil). This is a special fat that the brain can metabolize like sugar, but without producing inflammation or free radicals. It is an integral part of high-fat, low carbohydrate ketogenic diets such at the Atkins diet, and may also be a major weapon against malignant brain tumors and Alzheimer's. But never take this oil on an empty stomach as it can cause severe cramping. Rather, take it after eating the largest meals of the day. The dose is one tablespoon twice daily.

DHA oil. DHA is a component of fish oil and is the major omega-3 lipid in the brain. It also has powerful anti-inflammatory properties and directly inhibits excitotoxicity and microglial activation. Because it is extracted from algae, DHA has little risk of mercury contamination. The dose is 500 to 1,000 mg per day. It should be kept in a refrigerator.

There are a number of other extracts and herbs that can reduce brain inflammation and excitotoxicity, but these are the major ones. They have also been shown to improve one's mood, reduce anxiety and depression, and reduce one's risk of neurodegenerative diseases. ■

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Special Report

Head Trauma Can Cause Progressive Dementia

What do Lou Greekmur, Wally Hilgenberg, Dave Duerson, and John Grimsley have in common? They are all former NFL players who died early, and whose brain exams showed changes normally seen in people with degenerative brain diseases such as Alzheimer's and Parkinson's.

Duerson, a member of the 1985 Super Bowl champion Chicago Bears, recently committed suicide after battling severe depression, memory problems, and persistent confusion. He was so concerned about his condition that he shot himself in the chest and requested that his brain be sent to Boston University to be studied.

In recent years, stories and articles have described a new syndrome, chronic traumatic encephalopathy (CTE), affecting players engaged in contact sports who have experienced repetitive concussions. It has been known for a long time that boxers go through brain changes and often experience dementia later in life — a condition called "dementia pugilistica."

While CTE does not affect all players who experience concussions, it appears to affect a significant number. It's estimated that 1.5 million people suffer traumatic brain injury each year in the United States. Most of these occur during sporting events. In fact, CTE symptoms such as depression, headaches, insomnia, and behavioral problems are now being reported in high school athletes.

The common denominator appears to be minor head injuries that occur several times during a single game or throughout the season. In many cases, the player does not even lose consciousness. They may even appear to recover completely between injuries.

Yet when pathologists have examined the brains of CTE sufferers, they found several commonalities, including loss of brain connections (axons, dendrites, and synapses) and a loss of selected groups of brain cells. Shockingly, these changes appear to be progressive — that is, they continue long after the person stopped playing the sport.

The damaged brains contained large amounts of a substance called tau protein, which is commonly seen in Alzheimer's disease. Some players also developed Parkinson's or Lou Gehrig's disease. Yet no one could explain what was causing the brain to undergo progressive degeneration long after the concussions had occurred.

Recently, I co-authored an article for the journal Surgical Neurology International with Dr. Joseph Maroon, a professor of neurosurgery at the University of Pittsburgh Medical Center and team neurosurgeon for the Pittsburgh Steelers. In the article, we explain for the first time how repeated minor head injuries can lead to progressive brain degeneration, even long after they retire from the game.

We believe that CTE is the result of an immunoexcitotoxic reaction in the injured brain, caused by the buildup of excitotoxins such as glutamate, aspartate, and quinolinic acid. The source of the excitotoxins is the brain's own immune cells — the microglia. These cells are activated by even minor injuries to the brain. Normally, they are shut off soon after an injury and switch from being damaging to repairing damage.

However, in the case of a number of concussions spaced relatively close together, these microglia are unable, in some people, to switch to the reparative mode — they continue to secrete the damaging inflammatory chemicals and excitotoxins long after the injuries occur. As a person ages and is exposed to other brain damaging events, the process speeds up, leading to dementia, Parkinson's, depression, behavioral problems, and other symptoms.

While this is a well-supported hypothesis, only future research will determine if it is the answer. If it is, there are a number of ways to reduce immunoexcitotoxicity, which hold great hope not only for athletes, but also for those suffering other neurological disorders. ■

Health and Nutrition Updates

Omega-3 Prevents Cell Death

In a previous newsletter on the subject of antiaging research, I explained that one of the big breakthroughs in the field was the finding that the length of our telomeres plays a significant role in our aging and risk of being frail and disabled with disease. Telomeres are the part of the DNA sequence at the end of our chromosomes. Telomeres act like the plastic caps on your shoestrings; they keep DNA from unraveling — which causes cells to die early.

In one new study, it was shown that telomere length determined one's risk of dying or being disabled by a heart attack. Those with longer telomeres at the beginning of the study lived longer than those with shorter ones.

In this study, researchers measured telomere length in 608 people who had cardiovascular disease, and followed them for five years to see how fast their telomeres eroded and how it was related to their intake of omega-3 oils. They chose omega-3 oils because these oils have a profound effect in reducing heart attack deaths, far greater than any statin drug.

The researchers discovered that those with the highest intake of omega-3 oils had the slowest erosion of their telomeres, which translated into less mortality and morbidity from cardiovascular disease.

Later, they adjusted the findings for other factors that might influence the outcome of the study, such as blood pressure, inflammatory markers, blood lipid profiles, and medications. The relation to omega-3 oils held up — that is, it was a real finding.

A number of supplements have been found to protect telomeres, including vitamin D3, folic acid, flavonoids, and antioxidant minerals such as magnesium and selenium. Studies have shown that statin drugs have no effect on telomere length. Omega-3 oils, such as DHA, have a number of beneficial antiaging effects, including reducing inflammation, preventing heart arrhythmias, improving blood flow, and reducing oxidative stress.

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Some cells, such as stem cells, have an enzyme called telomerase that can rebuild a damaged telomere, extending the life of the cell. Until recently, it was thought that normal cells had little or no telomerase enzyme. But recent studies have shown that omega-3 oils can stimulate telomerase in even ordinary cells.

This would be bad if you had cancer, as cancer cells produce large amounts of the enzyme to extend their life spans. Yet this research also found that omega-3 oils suppressed the telomerase enzyme in cancer cells — which makes them die early.

Omega-3 actually helps kill cancer cells, but it also makes normal cells stronger. In addition, the study found that omega-3 greatly improved the outcome of cardiovascular patients.

Studies Give Hope for Living to 100

Researchers in Sweden have been collecting data on centenarians since as early as 1860, and they have discovered information that has changed the way we look at human aging. Until recently, it was thought that there was little we could do to change human life span. Diet, exercise and other health measures, they assumed, added little to life extension.

The Swedish researchers found that in 1860 only about three people per year lived to celebrate their 100th birthday in Sweden. In 2007, over 750 Swedes reached that milestone.

Further studies, which examined Japanese in addition to Swedes, showed a dramatic rise in the number of people living past age 105 in both countries, beginning in the 1980s. This happened despite the fact that debilitating diseases such as cancer, hypertension, and diabetes have increased.

It has been estimated that by the year 2107 more than half of the people in Sweden will be able to reach their 100th birthday.

It is obvious, of course, that if you smoke, get little exercise, and eat a typical Western diet you are very unlikely to reach such a milestone. ■

Ask Dr. Blaylock

Attention Blaylock Readers:

Dr. Blaylock welcomes any questions or comments you would like to share.
Each month, he will select a few to be published and answered in the newsletter.
Please remember that he cannot answer every question.
When submitting a question or comment, please include full name, city, and state.
Please e-mail the doctor at: askblaylock@newsmax.com.

Q: My blood tests show high levels of aluminum. Can you recommend any supplement/product to safely remove the aluminum?

— Jo S., Warwick, R.I.

A: Aluminum is very difficult to remove from the body, especially from the brain. The drugs that are used must be given by muscle injection and are very painful. In my November 2010 newsletter, I offered a list of nutrients that reduce aluminum toxicity, including bee propolis, vitamin C, and curcumin.

Curcumin has been shown to powerfully suppress aluminum toxicity in the body, especially the brain. See the August 2011 newsletter on curcumin for details on how to take it.

Q: I'm 36, with a Grade 2 glioma. My doctor told me I have between five and 10 years to live. I bought your book "Natural Strategies for Cancer Patients." Is there any other book, research, or websites that can help my search for a cure?

— Stuart K., Las Vegas, Nev.

A: I am sorry you are facing this terrible problem, and I shall pray for you. Unfortunately, I am unaware of a program that can cure a low-grade glioma.

However, there is encouraging research that suggests we can reduce the growth of the glioma, and potentially arrest its growth. Most of this research is being done on the much more malignant glioma tumor called a glioblastoma multiforma.

The most encouraging results come from using curcumin, adhering to a ketogenic diet, drinking the green drink I discuss in my book "Natural Strategies for Cancer Patients," and avoiding all excitotoxin additives (eat only foods you prepare yourself).

High-dose vitamin D3 has produced some very encouraging results in arresting tumor growth. This entails taking a dose of 10,000 IU a day.

Avoiding red meats is critical, as iron promotes tumor growth. It is always advisable for cancer patients to get an iron panel laboratory test.

Also critical is avoiding omega-6 oils (corn, safflower, sunflower, canola, peanut, and soybean oils).

Mercury, as found in certain seafoods and dental amalgam fillings, is also associated with brain gliomas.

Q: Is it a good idea to get the shingles vaccine? Is there a better way to prevent them than the vaccine?

— Joycelyn V., Mobile, Ala.

A: I never advise anyone to get an adult vaccine. Having an attack of shingles is a sign of immune suppression. To avoid this, one needs to avoid immune-suppressing oils (vegetable oils), eat a healthy diet with 10 servings of vegetables, avoid sugar, and take supplements that boost immunity naturally.

These supplements include astaxanthin, beta-1,3/1,6-glucan, and a well-balanced vitamin/mineral. The dose for astaxanthin is 4 mg twice daily, taken

with meals. The beta-1,3/1,6-glucan dose is 250 mg to be taken on an empty stomach with water once a week. The vitamin/mineral brand I recommend is Extend Core.

Q: My brother suffers from stage IV pancreatic cancer. Are there any supplements that could help him?

— Karen B., Mandeville, La.

A: Conventional medicine agrees that stage IV pancreatic cancer will not be cured by the best of treatments offered by oncologists.

One of the most significant reports I have seen showed that a patient who took curcumin in a very low dose had his tumor shrink 75 percent. That is very impressive.

The tumor remained small as long as the patient took the curcumin. Other metastasis from the primary tumor did not respond to the curcumin. It may be that a higher dose would have had even better results.

Mixing curcumin with extra-virgin olive oil greatly increases curcumin absorption, allowing it to reach concentrations known to kill cancer cells. I would suggest you read my book "Natural Strategies for Cancer Patients," which goes into detail concerning natural treatments.

Also, several alternative oncologists have had some dramatic results with stage IV cancers. See also Suzanne Somers' book, "Knockout."

Q: My boyfriend was given a diagnosis of peripheral neuropathy. Do you think it would it be safe for him to take L-theanine?

— Robin M., Charlottesville, Va.

A: One cannot assume peripheral neuropathy, as it could be a number of other problems. For example, one can have spinal stenosis, severe anemia, heavy metal poisoning, or vascular disease of the vessels supplying the legs. It would be best to have a thorough workup to track down the exact cause.

L-theanine would be safe, but he needs a specific diagnosis.

Q: I have a friend who suffers from "disembarkment syndrome." She experiences a rolling and rocking sensation that only subsides when she is asleep. Do you have any experience with this condition?

— Zebulon G., Fayetteville, N.C.

A: This is a very strange syndrome. I once treated a case that sounds very similar to your friend. My main recommendation to that patient was to increase her intake of magnesium. The time-release form is best at a dose of 500 mg twice a day.

My patient improved significantly after taking the magnesium. I then told her to be careful to eliminate all excitotoxins from her foods, eat lots of vegetables, and avoid sugar and inflammatory vegetable oils. After a few weeks she was essentially well.

Other things that should be of benefit include curcumin (500 mg a day), L-theanine in a dose of 400 mg three times a day; and a combination of methylcobalamin (10,000 IU a day), folate (400 mcg a day), vitamin B6 (25 mg a day), and riboflavin (100 mg twice a day).

This syndrome occurs most often in women, and some have improved with natural hormone replacement. ■

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