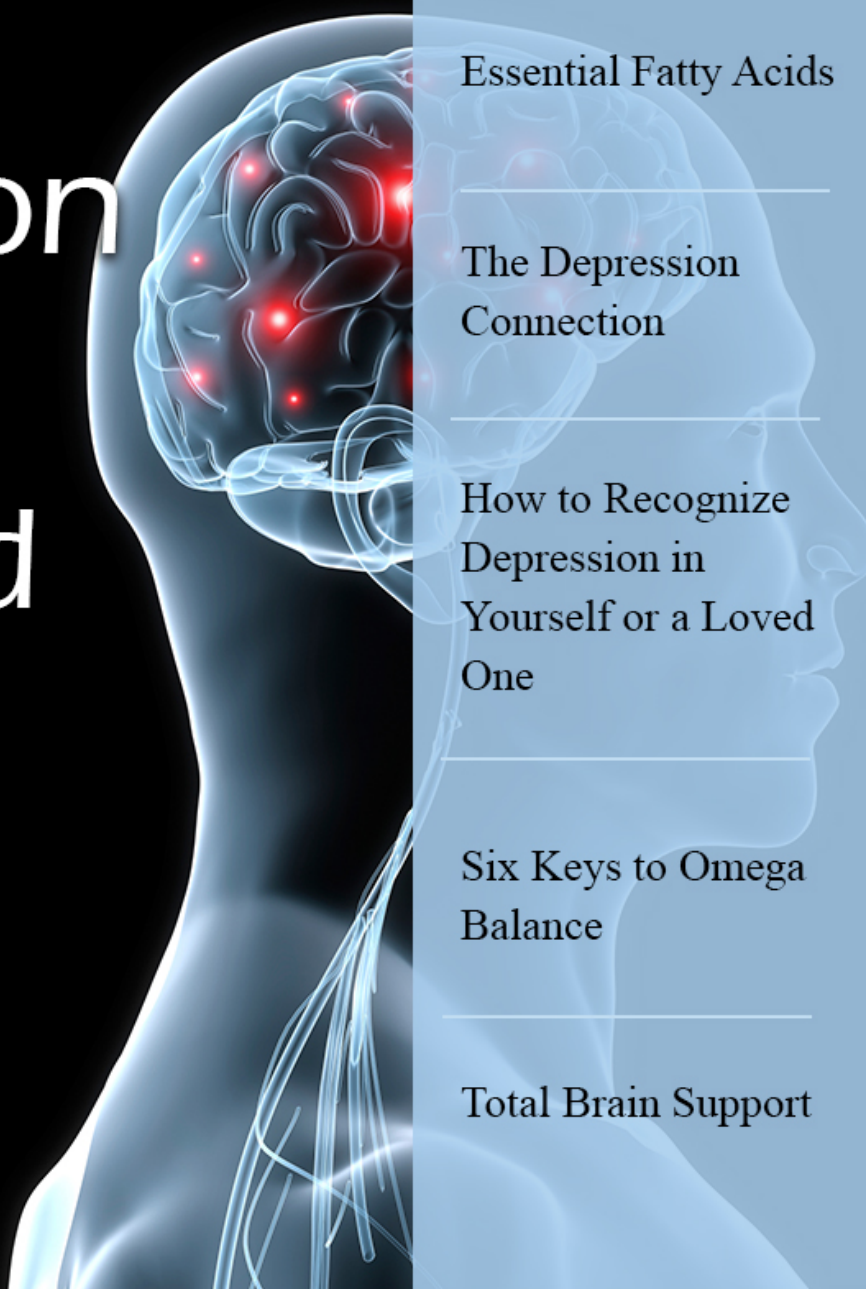


Eliminate Depression with Brainfood



The Safe Way to
Fight Depression

Essential Fatty Acids

The Depression
Connection

How to Recognize
Depression in
Yourself or a Loved
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Six Keys to Omega
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Total Brain Support

Published by
The Institute for Natural Healing
ADDRESS: **PO Box 969, Frederick, MD 21705**
1-800-818-7209

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Eliminate Depression with Brainfood

Winston Churchill called it his “black dog.” Abraham Lincoln said it made him “the most miserable man living.”

They were both talking about depression. Depression can ravage anyone: regardless of age, race, or financial status.

Depression can destroy your relationships, your job, your sex life, and your health. And it plagues over 200 million Americans every day. In fact, it can strike anybody...in any walk of life. Actor Jim Carrey, musician Billy Joel, and football great Terry Bradshaw have all battled depression.

The first medical response to this disorder is to prescribe antidepressants: In 2010 alone, US doctors wrote 254 million prescriptions for antidepressants.

Beyond Sadness

Depression is pretty much the “common cold” of mental health. It affects up to 350 million people worldwide every year. Alarmingly, it accounts for about half of all suicides.

That tells you that depression is not just a case of the blues. We all have times of stress, grief, and sadness in our lives. Anytime we have a personal tragedy, we will react with some measure of depression. But that is usually a process we can cope with over a period of time.

Clinical depression is different. It can last a long time for no particular reason. It sucks the joy and hope out of life. It causes you to lose interest in things you once enjoyed—like friends and food and sex. When you’re depressed, even a winning lottery ticket won’t bring a smile to your face.

There are several types of depression, including:

- Major Depression: a combination of symptoms (fatigue, hopelessness, sleep problems, change in weight or appetite) that interfere with daily life and normal functioning.
- Dysthymic Disorder: less severe symptoms that last for two years or more.
- Postpartum Depression: develops within one month after delivery of a baby.

(Note: There are more serious, psychotic forms of depression that are not within the scope of this article. These are serious illnesses that require professional medical attention.)

It’s surprising how many people live in a state of depression and never seek treatment. Some figures are higher than 80% of those who experience depression.

There are a number of reasons for that. A depressed person often feels too exhausted and hopeless to ask for help. It can also be a hard thing to face. The stigma that used to be attached to depression has eased somewhat, but a lot of people still want to pull themselves up by the bootstraps and snap out of it. And it just doesn’t happen.

The reason is this: There is a chemistry behind depression that needs to be resolved. Research has shown that the brains of depressed people look different than the brains of those without depression. So you can't think your way out of it. You have to correct it. And that's where Dr. Andrew Stoll's natural therapy comes into play.

The Safe Way to Fight Depression

Dr. Stoll spent years working with patients suffering from depression. Initially, he prescribed medication to combat it. But he was unhappy with the side effects and limited success of such drugs.

Between his own clinical experience and reading all the scientific literature available, he came to the conclusion that drugs were not a long-term solution. Certainly not a safe one.

So he looked for a better treatment. He started to investigate natural substances that affected brain cells. And that search led him to omega-3s.

Omega-3 fatty acids are concentrated in brain cells. These particular fatty acids are essential components of the cell membranes that govern mood activity. Because they are supposed to be abundant in brain tissue, increasing them in the diet has no side effects. That means they are safe for everyone—even children and elderly people who might not be able to tolerate stronger medications.

It seemed too good to be true: a natural solution for depression. But the theory made sense... This led to an exhaustive study on it. It's that research which won Dr. Stoll the Klerman Research Award for depression.

A subject in one study was a 45-year-old female research assistant. She had been suffering from bipolar depression for 23 years. Before the study began, she was taking conventional medicine: lithium and Depakote.

These medications were controlling her depression...but at a price. She no longer experienced extreme highs and lows, but simply felt "flat" and numb all the time. And the drugs' positive effects were lessening over time.

She didn't enjoy her work or friends. In fact, she didn't get any pleasure from life.

The drugs dramatically increased her body weight. She was lethargic and tired all the time. So when she heard about this study using a natural solution, she signed up.

John Leslie of Boston took part in an omega-3 study. He had tried Prozac for depression but didn't like the way it made him feel. He stopped taking it and enrolled in the study at Massachusetts General Hospital. After taking the supplement for three weeks, he noticed a significant improvement. Even after the study ended, he has continued taking the omega-3 and says, "I'm fine today. Not only do I not feel as blue, but when [depressed feelings] do come, I am able to handle it." —*Fish Oil Helps Treat Depression*, ABC news.com, Aug 19, 2010

The study was double blind—meaning that neither the doctor nor the patient knew who was getting the fish oil or a placebo. But just two weeks into the study, she was sure she was taking the natural substance: It was like she could suddenly feel joy again.

In just four weeks, her mania and depression had lifted. When the study was concluded she continued on the fish oil supplements. She stopped taking the medication and watched as her weight went down and her energy went up. Just taking omega-3 was enough to restore the happy feelings in her life. At a follow-up consultation three years later, she was still in full remission from bipolar disorder.

Essential Fatty Acids

Fatty acids are acids that are produced when dietary fat is broken down in the body. They are “essential” because your body doesn’t make them—you have to get them from food. The kind of fatty acids we get from our diets are called omega-3 and omega-6. The trick is keeping them in balance. More about this in a moment.

First let’s take a look at the source of these essential fatty acids:

- Omega-3s are found mostly in fish, grass-fed beef, and a few plants. The main sources are wild salmon and mackerel, green leafy vegetables, walnuts, and flax.
- Omega-6s come mostly from grains and oils: sunflower, soybean, canola, and corn. They are prevalent in processed foods that use these oils. But you’ll also find them in grain-fed, factory-farmed beef.

Each has its function and each competes for being used as a cellular building block, particularly in the brain. But here’s where the difference comes in...

The human brain is composed of 60% fat. Its acid of choice for creating cell membranes—and having the energy to make nerve connections—is omega-3.

When the brain can’t get all the omega-3 it needs, it will use omega-6. But omega-6 is an inferior building material by comparison. (Omega-6 is essential, but is better suited for other functions, like maintaining skin health.)

Have you ever heard that fish is “brain food”? Now you know why. It is the source of omega-3 fatty acids.

So if you’re not getting much fish in your diet—and you eat processed foods high in omega-6 fatty acids—you’re filling up on low-quality fuel. And here’s the thing...omega-6s love to take over. Without omega-3s to keep them in check, they run wild in the body and produce inflammation.

Joseph Hibbeln, M.D.

As lead Clinical Investigator, Unit on Nutrition in Psychiatry, NIAAA, and a Commander in the United States Public Health Service, Dr. Hibbeln has performed extensive international collaborations for clinical trials of omega-3 fatty acids for the prevention of suicide, postpartum depression, and violence. He is a primary collaborator in the Avon Longitudinal Study of Parents and Children, Bristol, UK, examining the residual effect of nutritional insufficiencies in pregnancy in childhood neurodevelopmental outcomes.

Dr. Hibbeln was one of the very first investigators to draw attention to the importance of omega-3 fatty acids in psychiatric disorders and he is frequently sought out to communicate scientific findings in this field through major public media.

Before the advent of processed foods, people naturally got a healthy ratio of omega-3s to omega-6s. Pretty close to the ideal of 1:1. Today, in our processed land of plenty, the typical American diet has 20 or more times omega-6 than omega-3. That's a shocking ratio. Some experts place it even higher. That much omega-6 in your body will flood the cells and get in the way of the omega-3s you do have. Most agree the ratio shouldn't be higher than 5:1.

Dr. Joseph Hibbeln, who's been with the National Institutes of Health for 17 years, is a crusader for omega-3s. He comments that due to processed food, we actually take in 10% of all our calories from soybean and seed oils—and the large amounts of omega-6s they contain. Dr. Hibbeln likes to stress the fact that omega fatty acids really are essential. In other words, restoring their proper balance is simply correcting a deficiency. You are not mega-dosing on an abnormal substance, you are making sure the nutrients you need are there.

The Depression Connection

Here are some fast facts that led to the discovery of the role of omega-3 in connection with depression:

- Depression is 60 times higher in New Zealand than Japan. Seafood consumption is about 40 pounds per person per year in New Zealand, compared to 150 pounds per person per year in Japan.
- Postpartum depression is 50 times more common in countries where dietary seafood levels are low.
- A University of Pittsburgh study revealed that omega-3s are associated with an increased amount of grey matter in areas of the brain that are linked to mood and behavior.

When Dr. Andrew Stoll began the search for an alternative anti-depressant, omega-3 fatty acids kept showing up as a match for healthy cell structure and production of signaling molecules in the body—both important for brain health.

Could it really be coincidence that just as natural sources of omega-3s in the diet—cold water oily fish and wild animals and plants—were replaced with processed foods, the incidence of depression rose?

First of all, young mammals (including humans) get their initial supply of omega-3s from their mother while still in the uterus. This continues as the infant is breast fed. The baby requires high levels of omega-3s to properly develop the brain, as well as the heart and cardiovascular system. This is so important that the baby will absorb omega-3s through the placenta, and then the breast milk, draining the mother's reserves if necessary. (There are no omega-3s in U.S. baby formula.)

Naturally, if the mother is deficient, this will affect both her and the growing baby.

The body holds on to some of the omega-3s throughout life. This has been demonstrated in studies of omega-3-deprived mice. Scientists found that it can take several generations for offspring to deplete their brains of omega-3 fatty acids.

This explains how problems develop when there is a deficiency of omega 3...

The baby takes what it needs from the mother. If it doesn't receive enough, the child can suffer disorders like learning disabilities and attention deficit disorder. If the mother runs low, she is twice as likely to develop postpartum depression.

And now a cycle is established. A mother deficient in omega-3s cannot pass on what she doesn't have. The baby is likewise deficient. Could this account for the rise in the rate of depression in the United States—and the fact that it often runs in families?

Some believe that is exactly what is happening.

How to Recognize Depression in Yourself or a Loved One

Symptoms of depression can be rather non-specific. People often do not want to admit how bad they are feeling. So look for these two things first:

1. An obvious low mood that lasts more than two weeks.
2. Lack of interest in everyday activities.

If the first two symptoms are present, the following factors indicate depression:

- Sleeping too much or too little
- Increased or decreased appetite
- Low energy
- Loss of pleasure in things that were once enjoyable

Don't be afraid to ask someone you care about if they are depressed—and even if they are having suicidal thoughts. There was once a myth that by asking about suicide you might be planting the thought in their brain, but that isn't true. The person may be very relieved that someone cares enough to ask and assist them in getting help.

A Matter of Balance

Changes in the modern Western diet have totally upset the balance of omega-6s to omega-3s. In the last 150 years or so, those changes have been dramatic. And they've had a huge impact on our diet.

In the past, the availability of food had an influence on

Depression Myths

1. *The key to ending depression is mastering your thoughts.* This thinking presumes that depression is something you have control over. If you are suffering a chemical or nutrient imbalance, that simply isn't true and can make you feel worse. Better coping skills can help, but they don't "cure" depression.

2. *A person with depression is just lazy.* Depression can result in extreme exhaustion and apathy. These are signs of the illness, not character flaws. When depression is properly treated and corrected, these symptoms will go away.

3. *Depression is a natural part of aging.* The fact that many older people become depressed is due to a lot of factors. For instance, depression may be a side effect of certain medications and illnesses. Big life changes can also trigger depression. When that happens, the depression needs to be addressed. It is *not* just part of the aging process.

population control. People didn't have the luxury of going to the grocery store for an endless selection of food items. Available foods were what could be hunted, caught, or locally grown. The population grew slowly and didn't hit the one billion mark until 1804.

Then, a mere 195 years later, in 1999, the count was six billion. The food supply has had to grow accordingly. This has happened by means of farm machinery, irrigation, fertilizers, pesticides, and processing. Quantity has been achieved—at the expense of quality.

During the last century, the rise of lifestyle diseases has correlated with the decline in the Western diet. Hypertension, diabetes, heart disease, cancer, and depression—formerly rare—are rampant in our society.

Brain health, in particular, requires the right nutrition to develop and maintain over a lifetime. Humans need several times more energy than smaller-brained species to sustain a healthy brain. Animals with small brains can spend an entire day foraging for low-quality food like tree leaves. But humans need fuel that will equip their brains for thinking, creating, teaching, and building. That demands high quality materials like omega-3 fatty acids.

Omega-3s allow cell membranes to become very fluid. Nutrients can easily pass through to nourish the cell. If you eat a lot of saturated fat without omega-3s, the membranes get quite stiff. That slows down both normal activity and rebuilding of cell structure.

The effect this has on behavior is striking. When lab rats are deprived of omega-3s, their behavior changes in a matter of weeks. They become anxious and less able to learn tasks, and begin to panic under stress. They lose their capacity for pleasure and don't even respond well to morphine, a drug that induces pleasure.

When you think of how our natural diet has changed while our basic biology has not, it's no surprise that depression is on the rise. One of every six Americans can expect to experience a major depressive episode during their lifetime. And depression is even affecting children at younger and younger ages.

Differing Effects of Depression

Women: Depression is much more common in women. Hormonal changes throughout life affect brain chemistry and can make women more vulnerable to depression. Women tend to talk more about the feelings associated with depression: sadness, worthlessness, and guilt.

Men: Depression is often expressed differently in men. They will acknowledge fatigue, sleep disturbances, and irritability, but not emotions. Instead, men may throw themselves into their work and are more likely to turn to alcohol or drugs.

Children: Depression in younger children may be expressed in several ways: by pretending to be sick to avoid going to school, by clinging to parents, or by developing fear that a parent might die. Older kids become negative and feel misunderstood. They tend to sulk and have trouble at school.

In all cases, depression goes beyond normal mood swings. A key component is isolation and loss of interest in formerly enjoyable activities.

Dr. Joe Hibbeln saw the connection back in 1998. That's when he looked at populations that still consume high quantities of omega 3s to validate the link with depression. His landmark study, where he compared annual rates of depression with levels of fish consumption in a cross section of nations, was published in the British journal *The Lancet*.

Dr. Hibbeln found that depression rates varied widely by country, but could be predicted by how much fish the population ate. For instance:

- Japan, at 150 pounds of fish consumption per person per year = 0.12% depression
- Korea, at 100 pounds of fish consumption per person per year = 2.3% depression
- United States, at 50 pounds of fish consumption per person per year = 3.0% depression
- New Zealand, at 40 pounds of fish consumption per person per year = 5.8% depression

New Zealand's rate of depression is almost 50 times higher than that of Japan!

Needing the Right Fat

The two active ingredients of omega-3 fish oil are EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). The ingredient with the therapeutic effect is EPA.

A couple of things that have come out of the studies are this:

- DHA used alone does not seem to offer any anti-depressive benefits. This explains why some omega-3 studies have been contradictory; the ratio has to include EPA.
- The correct formulation of EPA/DHA does help in cases of depression, but is not a mood enhancer when no depression is present. It did not improve the mood of any study participants who were not depressed.

However, increasing omega-3s can lift mood when depression is present. Researchers found that when they fed omega-3s to piglets, the effects on the brain were the same as Prozac. The increase in fatty acids resulted in higher levels of the neurotransmitter serotonin. After only 18 days, the animals had double the level of serotonin in the parts of the brain that control depression and impulsivity.

The fact that omega 3 fatty acids have the same biochemical action as prescription mood medications—without the side effects—is what drew Dr. Stoll to test them in clinical trials. He says, “An incredible fact seems to have fallen through the cracks... All cell membranes are made of fat, and the omega-3 fatty acids, though depleted in many of us, are supposed to be the most abundant of the essential lipids in the membranes of the brain.”

So besides the lack of cold water fish in the diet, the overall push to reduce dietary fat has also limited the intake of omega-3s. Many Americans have cut back on red meat and eggs—two potential sources—and switched to oils like corn and sunflower, which are low in omega-3s.

Currently, in North America, the average daily intake of EPA plus DHA is only 130 mg, far short of the daily 1,000–2,000 mg that researchers recommend for optimal mood function. And based on clinical trials, those suffering from depression can benefit from 3,000–4,000 mg.

Increasing your intake of omega-3s will boost your levels. And cutting back on omega-6s is just as important. Here are some tips for finding a good balance...

Six Keys to Omega Balance

Key #1: Eat Fish

Fatty fish like salmon and blue fin tuna are at the top of the list. And don't forget anchovies, sardines, shrimp, mollusks, crab, and rainbow trout. But you do want to be aware of the source of the fish you buy. Fish have to eat omega-3s to have them in their bodies as well.

Omega-3s travel up the food chain from algae, so the fish must have fed on algae or smaller fish that have done so. Farm-raised fish that are fed grain products will not be rich in omega-3s. In fact, the grain diet will make them even higher in omega-6s.

- *Wild-Caught Alaskan Salmon*: You can't go wrong with fish from this source. Alaska's salmon fisheries are well-protected. Biologists actually stand at river mouths and count the number of wild fish that have returned to spawn. If the numbers go down, the fishery is closed so as not to be over-fished. These salmon have few contaminants and are loaded with omega 3s.
- *Albacore Tuna*: The kind you find in a can is fine if it is "troll- or pole-caught" in the U.S. or British Columbia. Fish caught this way usually weigh less than 20 pounds, so they have much lower mercury content. Those caught in cold northern waters will have more omega-3s.
- *Mussels and Oysters* are a good choice because they feed off the algae in the water, which makes them rich in omega-3s.
- *Pacific, Wild-Caught Sardines* are even higher in omega-3s than salmon or tuna, and very inexpensive in comparison. Make them part of a Greek salad or just enjoy as a quick snack. But use caution when eating the ones sold in cans—they can contain high levels of mercury, arsenic, and other toxins.

Key #2: Eat Grass-Fed Beef and Free-Range Chickens and Eggs

Meat from grass-fed animals has two to four times more omega-3s than meat from grain-fed animals. Eggs from pastured hens can contain as much as 10 times more omega-3s than eggs from factory hens.

Key #3: Be Selective About Oil

Olive oil is not high in omega-3s. But it is very low in omega-6s. It won't upset the balance. Oils with a moderate amount of omega 6s are avocado, hemp, and coconut. Avoid the oils highest in omega 6s: soy, corn, cottonseed, safflower, and sunflower.

Key #4: Check Out Other Omega-3 Sources

Walnuts and flax seed are good sources of omega-3s. A handful of walnuts has about the same amount of omega-3 as a few ounces of salmon. Flax seeds can be sprinkled on salad or yogurt. Other foods that have some omega-3s are spinach, broccoli, and cauliflower.

Key #5: Read Food Labels Carefully

Commercial salad dressings and mayonnaise are made from the oils you want to avoid. So are packaged crackers, bread, granola bars, and pasta sauce. But some brands make these products with omega friendly oils... You just have to read the labels to find them.

Key #6: Supplement with Fish Oil

There are several things to look for in a quality supplement. Choose your supplement according to these guidelines:

- Check the ratio of EPA to DHA. Look for a ratio of at least 3:2 or 2:1 of EPA to DHA. EPA is the component that affects hormone balance and may help fight depression. But it gets depleted quickly.
- Look for a “tasteless” product. No one wants to taste fish oil hours after you’ve taken it, but that can happen with a rancid product. Find one that has been distilled with nitrogen. The oil is preserved and will not have a fishy aftertaste. Low quality supplements taste bad, have higher levels of contaminants, and may cause nausea and diarrhea. Once the product has been distilled with nitrogen by 50%, the product is clean and will not have these side effects.
- Dr. Stoll’s wife, fellow psychiatrist and researcher Dr. Carol Locke, has developed an omega-3 supplement to his standards. It is available at omegabrite.com. Other recommended products are Trader Darwin’s Hi Potency Omega-3 EPA from Trader Joe’s, Fish Body Oils 1,000 from GNC, and Nature’s Bounty EPA fish oil by Nature’s Bounty.

Other Things to Consider

- Flaxseed oil is high in omega-3s but may not be suited for high doses. Compared to fish oil, it has a higher concentration of ALA (alpha-linolenic acid) which converts to EPA. One study found that taking two tablespoons of ALA every day increased EPA levels by 138% in postmenopausal women. But use caution: It can also have a damaging effect on the thyroid at high levels.
- When you take omega-3 supplements, increase your intake of vitamins C and E. They help preserve the omega-3s in the body by preventing the formation of free radicals.
- One source for checking out brands of fish oil is consumerlabs.com. Companies voluntarily submit their products to Consumer Labs for analysis, who often fail them even though the supplement makers have to pay for the review. It is a subscription website, but can save you a lot of money in choosing quality supplements.

When it comes to calculating dosage, don't be fooled by how much omega-3 is in each capsule of the product you buy. Ingredients are listed by serving size, but the manufacturers can use any serving size they want. They may try to make it look like there is a lot of EPA in the product by making the serving size very large. Figure out the actual content this way:

Take the amount of EPA (or EPA + DHA) per serving, as listed on the label, and divide it by the serving size. That's what you are actually getting in each capsule.

Dr. Stoll routinely starts patients on one gram of EPA per day and gradually increases the dose until an effect is seen in the patient's mood. He rarely has to exceed six grams of EPA per day.

If you decide to supplement with omega-3 fish oil, there are a couple of things to keep in mind:

- If you are currently on anti-depressant medication, you should work with your doctor in adding omega-3s to your treatment plan. Not because omega-3s are dangerous, but because severe depression is dangerous. Omega-3s can help, but you will need professional supervision of prescription medication.
- Mega-doses of omega-3s can increase the effect of medications like Coumadin or aspirin. You should monitor this situation with your physician.

More Study Results...

At Sheffield University in England, Dr. Malcolm Peet gave omega-3 fatty acids to 70 depressed patients who had not been helped by drugs such as Prozac. After 12 weeks, 69% of the patients showed significant improvement compared with 25% of patients who were given the placebo.

In Dr. Andrew Stoll's Harvard Pilot Study, 64% of the patients who took 10 grams of fish oil per day for four months reported a marked improvement compared to 19% of those taking the placebo. The results were so dramatic that the study was stopped so that all patients could start taking the fish oil.

Dr. Michael Lucas found that omega-3s can ease the depression associated with menopause and perimenopause. The control group in his study took three gel capsules totaling one gram of EPA every day for eight weeks. Mild depression lifted and the incidence of hot flashes decreased. The results were similar to those obtained with hormone therapy and antidepressants.

Ways to Track Your Progress

If you want to keep track of the omega balance in your own diet, there's a handy tool available online for free. It's a program called KIM (Keep It Managed) and has a database of thousands of foods and their nutrients. It includes omega-3 and omega-6 content, so you can plug in your menu to check the levels in your own diet. It is interactive, so you can experiment to see what effect adding a couple salmon meals a week does for your omega-3 intake. You can also find the items in your diet that are high in omega-6s and adjust them by making different choices.

The program is provided by EFA education and is available at <http://efaeducation.org/sig/kim.html>.

“There are certainly people who have suffered from debilitating depression for 20 years, despite having gone through every reasonable pharmacological therapy. They take the omega-3s at high levels (2 to 3 grams per day), and suddenly their brain is freed.”
– **Joseph Hibbeln, M.D.**

If you’re curious about your own omega-3 blood levels, you can have a test done. This is not a routine blood test, but you can have it done on your own from home. A number of companies make home testing kits that include what you need to do a finger stick and mail in the sample. They run about \$150.

Total Brain Support

In clinical studies, most people have a positive response to omega-3 supplementation in three weeks or less. That’s about the same response time as SSRIs like Prozac.

The fact is, you need the benefit of these powerful healing acids all through life. Whether it’s developing a healthy brain in infancy...or regulating moods in adulthood...or protecting the aging brain against dementia...omega-3s are rocket fuel for the brain. Make sure you get all you can in your diet...and balance the competition by limiting omega-6s as much as you can.

Our modern food supply doesn’t naturally supply the omega-3/omega-6 balance we really need, but you have the resources to make it happen. The good news is that brain cells are constantly being renewed. Tomorrow’s cells are made up of what we eat today. You can give your brain the support it needs with omega-3 foods and supplements and enjoy better brain health for life.

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