

# Healthful Fats

What Essential Fatty  
Acids Can Do For  
*Your* Health.

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# HEALTHFUL FATS

## What Essential Fatty Acids Can Do For Your Health

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# Healthful Fat?

Fat--that stuff that makes us shudder with fear. Externally, it makes us look and feel unattractive, and makes our clothes fit poorly. As we age our metabolism slows, reducing our ability to stay slim. Internally, fat builds up in our arteries and on our organs and can eventually kill us. In recent years, doctors and the media assumed that reducing dietary fat would support arterial health and result in better health.

It's true. Too much body fat can be deadly. However, it's the lack of knowledge about the value of *appropriate dietary* fats that is the single greatest factor in this deadly progression. The elimination of fat in our diets is not the answer! Instead, finding which fats are actually needed by the body for optimal health should be our goal. Did you know that certain fats (also known as lipids) actually increase HDL (good) cholesterol, reduce LDL (bad) cholesterol, and heal the scarring of hardened arteries? Did you know that even some mental disorders, PMS, and rheumatoid arthritis can be traced to the inadequate intake of certain types of fat?

**Let me take you on a brief tour of the realm of Healthful Fats, so you can take action to increase your emotional, physical and cardiovascular health.**

# Why Fats are Important

What does fat do in our body? Why is it there at all? The body is *composed* of fat, along with protein and carbohydrates in various combinations. After water, **fat is the most abundant substance in every living thing**. Here is a brief list of some of the functions of the body that are *dependent upon fat*.

## **1. Metabolic Pathways**

First, fats are used in metabolic pathways [cyclic chemical reactions triggered by fats.] All of the substances in our bodies--enzymes, hormones, hair, teeth, muscles, eyes, organs, blood and bones are created as a result of these metabolic pathways.

## **2. Many Hormones are Composed of Fat**

Hormones are the biochemical supervisors, which oversee the production of protein molecules. They include substances that control growth, regulate our immune response to viral infection, and determine the body's fertility in women. Each of these hormones and many others are made primarily from fat.

## **3. The Walls of Nerve Cells are Made from Fat**

Fats enable the nerves to communicate, the heart to beat, and muscles to contract. The electrical-chemical impulses that generate these messages are conveyed from cell to cell by movable protein receptors embedded in the nerve cell walls that rotate like adjustable antennae. These walls are made primarily from fat and their fluidity or hardness determines the movement of the antennae.

## **4. Fat in Cell Walls Regulates the Flow of Nutrients into the Cell**

Minerals, water, and food constantly enter the cells of the body so that they can function effectively. If they enter too quickly, the cell is poisoned; if they enter too slowly, the cell starves. Fats ensure that these substances enter at a fixed, steady rate.

## **5. Fat is Responsible for Cell Oxygenation.**

Cell walls are composed of fat that dissolves oxygen and carries it through the membrane into the cell's interior. Without fat, cells cannot survive.

## **6. The Brain, Eyes, and Sexual Organs are Made of Highly Reactive Fat Tissue.**

# What are Fats?

To understand fat, it is necessary to understand the components of fat, the different types of fat, and what they do in the body.

## Fatty Acids

All fat is composed of small molecules called fatty acids. Fatty acids are important to us because they determine the nature of a fat: how nutritious it is, how much energy it contains, how it can keep us healthy, or what sort of threat it might be to our health. Fatty acids are chains of molecules and, depending on the atomic structure of the chain, have greater or lesser degrees of ability to interact with other molecules.

Depending on the number of free carbon atoms in the molecule, the fat is either saturated (carbon atoms are fully connected to other atoms) or unsaturated (carbon atoms are free to interact with other atoms). The more free carbon atoms a fatty acid chain has, the greater is its ability to react. Highly unsaturated fatty acid chains are highly reactive. This would be like dancing with a great partner--you can interact easily and fast. Highly saturated fatty acids are stable or inert. This would be like trying to get a group of people to dance together--tough. As we will see, the molecular structure of these fatty acids affects all aspects of a fat's function.

## There are two types of fats: Saturated and Unsaturated

### Saturated Fats

Saturated fatty acid chains are very stable and inert. They don't react in the body and have a high melting point. [The higher a melting point, the easier it is for fat to clump together in the body] The benefits of this type of fat are that they provide insulation against heat and cold, and act as safety belts for vital organs. They can easily be converted from carbohydrates so are always readily available to the body. That's a problem for modern society--it's very easy to turn food into this type of fat!

Although necessary, the reason saturated fats are portrayed as being bad for us, is that they also clump together in the body and line the arterial walls, becoming rigid over time. They then reduce the ability of the blood vessels to provide oxygen to the cells. This is the type of fat that clumps under your tummy, around your organs and in your arteries that eventually causes heart disease or strokes. *Too much of these important fats have deadly consequences.*



## The Three Types of Saturated Fats

### **Stearic Acid (SA)**

- Long chained molecule in beef, mutton and pork.
- Very stable in the body
- High melting point
- Can be dangerous to health if not balanced with certain unsaturated fats. (See next section).

### **Palmitic Acid (PA)**

- Medium chained molecule
- Found in coconut and palm kernel oils

### **Butyric Acid (BA)**

- Short chained molecule
- The largest component of butter.

## Unsaturated Fats



Other fatty acid chains have an atomic structure that enables them to react with other molecules in the body. These are called *unsaturated fatty acids*, and are either monosaturated or polyunsaturated, depending upon the structure of the molecule. They have a lower melting point than saturated fats, so don't clump together in the body. We normally think of them as oils, rather than fats.

Certain polyunsaturated fats, called **essential fatty acids (EFA's)**, are necessary to the functions of the body. They are called *essential* because we can't live without them and must be included in the diet, as they cannot be converted from other substances in our bodies like saturated fats can. EFA's are long molecules that are differentiated by the number of the carbon atoms in each molecule and the number of double bonds *[part of the molecule where carbon atoms are not attached to hydrogen atoms, so the carbon atoms attach to each other. The more double bonds in a fatty acid chain, the more reactive it is. Saturated fats have no double bonds.]*

Polyunsaturated fatty acid chains are named for the position that the double bonds take in the molecule. There are three particular types of fatty acids in polyunsaturated fats--omega 9, omega 6 and omega 3.

**There are 3 types of polyunsaturated fats:  
Omega 3, 6, and 9.**

## Omega 9 Fatty Acid (oleic)

- Monosaturated
- Found in olive, almond, pecan, cashew, filbert, and macadamia oil. These oils have a low degree of chemical activity and contribute mainly to the structure of cell membranes.

*They are neither actively good or bad for you, so when you cook with them, they will not actively hurt you like cooking with lard will, but it will not actively help you, either.*

## Omega 6 Fatty Acids

Omega 6 fatty acids are *crucial to all aspects of metabolism in the body and are usually abundant in our diet*. We don't normally need to supplement omega 6, unless there is a need for GLA (covered later). The Omega 6 fatty acids fall into the following groups:

### Linoleic Acid (LA)

- A dietary essential fatty acid
- A parent molecule (other fatty acids are made from it).
- Found in flax (linseed), safflower, sunflower, sesame, borage, black currant, soybean, and other vegetable oils.

### Gamma Linolenic Acid (GLA)

- Essential Fatty Acid, but not Dietary Essential
- Mother's milk contains high levels
- Found in borage, black currant, evening primrose oils, in special algae and in phytoplankton.
- Many people suffer from acute deficiencies of this required, but not dietary essential fatty acid since it can be converted from linoleic acid.

Note: Although GLA's are not dietary essential and can be converted from omega 3 fatty acids, in some people this process blocked by the lack of an enzyme in the body. GLA deficiency abounds in Western civilization. Supplementing one's diet with GLA's is the quickest way to solve a number of problems that may be occurring with the body, particularly when there is a hormone imbalance. (See Box Below)

### Arachidonic acid (AA)

- Found in most meats
- Can be made from linoleic acid
- Usually abundant in bodies
- Can contribute to inflammation

## What GLA's Do in the Body

*GLA's Convert into Prostaglandin 1 (PGE-1), which causes a number of positive effects in the body:*

- PGE-1 protects the body against excessive plasma cholesterol by preventing blood platelets from sticking together
- It slows down cholesterol production in the liver.
- It helps capillaries dilate to reduce the chance of blood clots and blood pressure.
- It also helps the body utilize insulin more efficiently so that energy levels are maintained longer.
- It protects the body against inflammation.
- It also has the effect of fine tuning the nerves to pass messages more efficiently.
- It helps regulate calcium metabolism, depositing as much calcium as is needed to optimize the excitatory functions of the nerves while assisting in depositing the rest in the bones.
- It orders the thymus gland to generate T-cells to destroy invasions.

### Indications of a Possible GLA Deficiency

- Eczema And Psoriasis
- Menstrual Complaints
- Hair Loss
- Reduced Immune Function
- Behavioral Difficulties
- Poor Healing
- Tingling in the Extremities
- Impaired Motor Coordination
- Poor Vision

## Omega 3 Fatty Acids (ALA)

The omega 3 fatty acids are vital components for metabolism and are less available in our diets, unless we eat a lot of fish. Consequently supplementation of omega 3 is the best way to achieve necessary amounts. They are broken down into two groups:

### Linolenic Acid (LNA)

- Dietary essential fatty acid
- Found in linseed (flax), pumpkin, soybean, and walnut oil.

### Stearidonic Acid (SDA)

- The most active of all essential fatty acids
- Found in wild seeds and in cold water fish, such as trout, salmon, herring, mackerel, and sardines.

### **What Omega 3 Fatty Acids Do in the Body**

- They are high in chemicals that control the metabolism and distribution of lipids (fats) in the body.
- They contain large amounts of phosphatides and lecithin, and produce high levels of lignans (defined in next section).

### **Indications of Omega 3 Deficiency**

- Abnormal Behavior Changes
- Muscle Weakness
- Impairment of Vision
- Impaired Learning Abilities
- Spread of Rheumatic and Arthritic Disorders
- Deteriorating Motor Coordination

## The Good and Bad of Polyunsaturates

To further complicate matters, there are 2 types of polyunsaturates: *cis* and *trans*. *It is important to understand the difference because our dietary intake of polyunsaturates over the last 30 years has not reduced the incidence of heart disease.*

### **CIS Fatty Acids (the good guys)**

These are the polyunsaturates in their natural state that carry out the functions in the body that perpetuate life. They are abundant in cold pressed oils that have been protected from light and heat.

### **Trans Fatty Acids (the bad guys)**

Trans fatty acids are created by food processing methods and heat. They don't exist in nature. They are so similar to cis fatty acids that the body can't tell the difference between the two. Unfortunately, however, the body can't carry out any of the structural or regulatory functions of cis fatty acids when trans fatty acids have taken their place. Basically, they keep the cell from being able to thoroughly digest proteins, transmit oxygen, and fight off bacteria and viruses.

Trans fatty acids are commonly labeled as 'hydrogenated' fat. The process of hydrogenating a polyunsaturate results in causing it to act in much the same way as a saturated fat 'miscast' as a polyunsaturate. You can find them in shortening, partially hydrogenated vegetable oils, and margarine.

## Triglycerides and Phosphatides

When your doctor measures your triglyceride levels, he or she is looking at how much overall fat you have in your blood. 95% of all the fats in our body are triglycerides, which are composed of both saturated and unsaturated fats. The remaining 5% are called phosphatides, which are a main component of cell membranes.

# The Benefits of Consuming Essential Fatty Acids

Essential fatty acids are crucial to the maintenance of many critical functions in the body:

- They play a major role in the maintaining the health of cell walls.
- They function as conduits of nerve impulses in the brain so that nerve messages can be carried throughout the body. If there is a deficiency in EFA's the impulses short circuit and lead to neurological problems.
- Certain fatty acids produce a series of metabolic pathways that result in the creation of **prostaglandins**. Prostaglandins have the following properties:
  - Influence hormones and affect cellular body processes.
  - Affect relaxation & contraction of the uterus & possibly also the intestinal tract, bronchi, & cardiovascular system.
  - Influences gastric secretion and kidney function.
  - Affect health of skin.

# Fats and Your Health

## Cholesterol-The Double Edged Sword

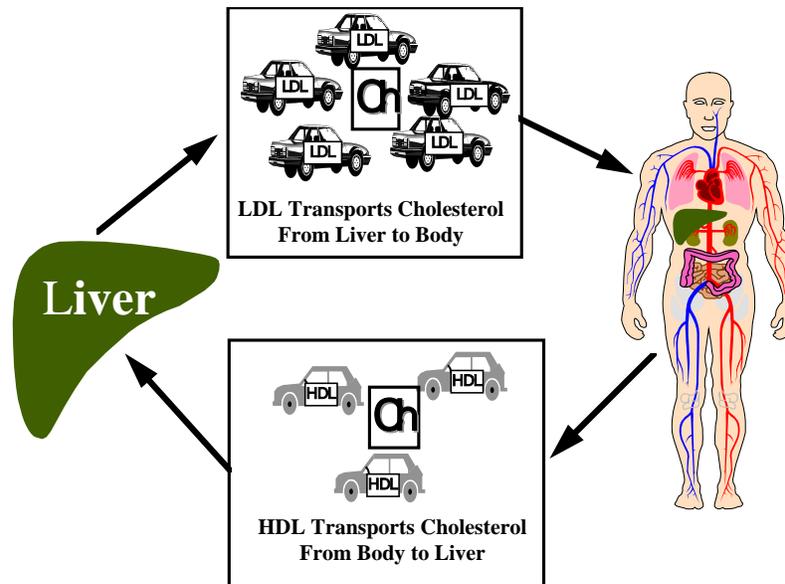
Just as fat has been made bad by the media, cholesterol has gotten plenty of bad press. We need to understand what it is in order to fully appreciate its value in the body. Along with the media influence about how bad fats are for our health, we have heard quite a bit about cholesterol. It just doesn't make sense. Why would a body have such awful stuff in it?

History shows that in 1913 a group of white rabbits were given a high cholesterol diet by Russian Nikolai Anichkov. This diet caused hardening of the arteries in the rabbits. This landmark study caused the wave of media influence that is still felt today. There are, however, some anomalies associated with the cholesterol story.

Cholesterol is a hard, waxy substance found in foods and created primarily in the liver. It has been correlated with heart disease, high blood pressure, strokes, and hardening of the arteries. It can be measured in two forms: high density (HDL) and low-density (LDL) lipoproteins (molecules composed of fat and protein). LDL's carry cholesterol to the cells for distribution. HDL's conduct cholesterol on the return journey to the liver, where it is converted to bile acid and excreted in the stools. If there aren't enough HDL's, cholesterol builds up in the cells.

**The ratio of LDL to HDL is a predictor of cardiovascular health.**

# Cholesterol Only Moves When Transported



- 1. LDL's carry cholesterol to the cells for distribution.**
- 2. HDL's carry cholesterol back to the liver, where it is converted to bile acid and excreted in the stools.**
- 3. If there aren't enough HDL's, cholesterol builds up in the cells.**

Another discussion in the media is that of “good” and “bad” cholesterol. In reality, neither one is good or bad. The problem is that LDL is bad because its carrying it into the cells and if there is not enough HDL to remove the cholesterol there is too much ‘left over in the cells’.

**Cholesterol has some very important functions in the body that should not be overlooked:**

- It is a regulating component that protects the body against exhaustion and collapse.
- It mediates the health and efficiency of the cell membranes.
- Cholesterol is part of the structure of the nerve sheaths, the white matter of the brain, and the adrenal glands.
- It also helps regulate the salt and water balance in the body.
- It is the derivative of steroid hormones; estrogen, progesterone, testosterone and the corticosteroids that help the body prepare for fight-or-flight stress response. Stress, in fact, is a stimulant for the production of cholesterol.

## EFA's and Cardiovascular Health



Coronary Heart Disease (CHD) is the leading cause of death in this county. It is apparently caused by a diet high in refined carbohydrates, cholesterol, saturated fat, and low in dietary essential fatty acids, coupled with a sedentary and/or stressful lifestyle. As CHD develops there is a rapid absorption of fats in the body and a rise in the plasma lipid count (fat globules in the blood), which increases LDL's. This leads to sticky blood platelets, which causes the blood to ooze around the body instead of flowing, depositing saturated fat. This fat clumps together in the arteries, then hardens and scars the artery walls. The impaired blood vessels become blocked, and a heart attack or stroke ensues.

EFA's reduce the stickiness of blood platelets and the levels of a blood-clotting factor so that blood flows more easily. This reduces the likelihood of blood clots. They also regulate the levels of saturated fats and reduce the levels of plasma cholesterol in the blood by increasing the HDL's and decreasing LDL's in the blood. Essential fatty acids help repair the lining of the artery walls after the scarring of arteriosclerosis, increasing elasticity and the tendency of the capillaries to dilate, so that they can carry oxygen and nutrients to the cells. Both omega 6 and 3 raise the body's levels of HDL, which returns cholesterol and other fats to the liver, and helps to inhibit the buildup of tissue fat characteristic of atherosclerosis.

# Emotional and Endocrine Health

## Omega-3 Fatty Acids and Depression

Omega-3 fatty acids have been shown to have an effect on depression. A large Norwegian study of nearly 22,000 participants revealed that those who regularly took cod liver oil, which is rich in omega-3 fatty acids, were about 30% less likely to have symptoms of depression than those who did not. The longer the participants took cod liver oil, the less likely they were to have high levels of depression.

Omega-3 fatty acids can also help improve mood. In a recent study at the Royal College of Surgeons in Ireland, the effect of omega-3 fatty acid supplementation was studied in 49 patients with repeated episodes of harming themselves. In addition to standard psychiatric care, study subjects were randomly assigned to receive 1200 mg EPA plus 900 mg DHA, or placebo, for 12 weeks. At the end of the treatment period, the group receiving omega-3 fatty acids had significantly greater improvements compared with the placebo group in scores for depression, suicide ideation and daily stress.

Some other studies show that people who are still depressed despite use of antidepressant medications may have reduced intensity of depression, anxiety, sleep disturbances, and sexual dysfunction when supplementing with omega-3 fatty acids.

The American Psychiatric Association's treatment recommendations for the use of omega-3 fatty acids bears testament to this strategy. Joseph R. Hibbeln, MD, from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) tells Life Extension magazine, "The strongest evidence was found for managing major depressive symptoms, with the effect of omega-3s being at least as great, if not greater than, antidepressant medications." Regarding these powerful fatty acids, Dr. Hibbeln further notes, "... deficient intakes may increase risk for mental distress."

It appears that a lack of DHA has far-reaching hormonal effects, increasing corticotropin-releasing hormone, a hormone that moderates emotionality. This may in turn contribute to hyperactivity within the hypothalamic pituitary adrenal (HPA) axis, an important neuroendocrine system that regulates mood, aggression and "fight-or-flight" responses associated with anxiety.

According to Brian M. Ross, MD, Associate Professor of Medicine, Chemistry and Public Health at the Northern Ontario School of Medicine of Lakehead University, supplementation with omega-3 fatty acids, in particular the long-chain varieties EPA and DHA, helps reduce the symptoms associated with clinical depression. Other provocative data suggest that boosting omega-3 fatty acid intake increases attention and reduces aggression, probably by enhancing cognitive processes."

A recent study conducted by Sarah M. Conklin, PhD, a postdoctoral scholar in Cardiovascular Behavioral Medicine, Department of Psychiatry at the University of Pittsburgh, showed that in healthy adults of average age 45 years, low levels of EPA were associated with high levels of impulsive behavior, hostility, and cynical ideas. Low levels of either EPA or DHA predicted high degrees of angry feelings and outbursts.<sup>9</sup>,

Even more exciting, Dr. Conklin did another study that showed the amount of omega-3 fatty acid consumed in the diet may actually cause beneficial anatomical changes in areas of the brain that regulate emotion. Interestingly, autopsy studies of brains from patients with major depressive disorder show selective deficits in DHA in the orbitofrontal cortex, another brain region implicated in depression and mood disorders.

# The Three Types of EFA Supplements

**As we have seen, our bodies cannot function optimally without essential fatty acids. Supplements are really the only way to ensure that your body is receiving what it needs to counter the effects of saturated fats and trans-fatty acids.**

The molecular structure of essential fatty acids is very sensitive to light, heat, and oxygen. These are unstable, active compounds. **The nutritional value of oils that have been heated or exposed to light and air is easily destroyed.** It is important to buy oils that have not been exposed to temperatures greater than 110 degrees Fahrenheit. The best oils have been 100% expeller pressed and have been extracted through mechanical means, without chemicals or high temperatures. Further, it is a good idea to buy oils in small, rather than large containers that have been extracted as recently as possible. It is also important that if you buy oils in gel capsules, make sure that the containers are light proof. Oils that are refrigerated last much longer, so check the refrigerator section of your health food store for your oils first. Once you get them home, keep them cool and out of light.

## Flax Oil Supplementation

Flax oil is the world's richest legal natural plant source of linolenic acid (the Omega 3 essential fatty acid). The health benefits from supplementing with flax oil cannot be understated. Here are some reasons why:

### 1. Flax Oil Contains Lecithin

- Lecithin affects more areas of the body's metabolism than any other lipid (fat).
- If included in the diet, lecithin helps guard against and increase resistance to a variety of diseases.
- Lecithin is the parent molecule of choline, which:
  1. Is an Edible Detergent that Keeps Blood Cholesterol Soluble so Guards Against the Buildup of Fatty Plaques on the Blood Vessel Walls.
  2. Is Vital for Liver Detoxification and Prevention of Fat Build-up.
  3. Is an Essential Component of the Neurotransmitter, Acetylcholine, which Affects Muscle Control, Gut Muscle Tone, Stress Reduction, and Memory.
- Lecithin is Responsible for the Way the Body Metabolizes Fats and Oils
- It Contributes to the Ability of the Body to Resist Disease by Acting as a Metabolic Precursor to Prostaglandin 3, made in the Thymus Gland (an important Immune System Gland)

## 2. Flax Oil Produces Lignans

- Lignans are a Series of Chemical Compounds that exert antioxidant effects

## 3. Other Benefits of Flax Oil

- Relieves Constipation and Assists Bowel Movements.
- Helps regulate triglycerides levels, which puts fewer demands on the liver.

## Fish Oil Supplementation

Fish oil has been increasingly shown to have such important health benefits that it is the number one supplement recommended by doctors for cardiovascular support.

### EPA and DHA - The Active Components in Fish Oil

Omega 3 fish oil contains two active ingredients: EPA (Eicosapentaenoic Acid) and DHA (Docosahexaenoic Acid). Each of these vital nutrients has different functions in the body.

#### DHA

DHA is very important for cognitive function, particularly for the developing brain of a fetus. It is one of the 'building blocks' of the brain, forming about 8% of the brain by weight. High concentrations of DHA in the fetal brain increase 300-500% during the last trimester of pregnancy. Adding DHA to a pregnant mother's diet may be beneficial for the fetus's brain development. Additionally, an infant requires a lot of DHA in the first two years of life to support the growth of the brain.

As I have discussed earlier, when high levels of omega 6 fatty acids are eaten, the balance between 3 and 6 becomes altered. This imbalance should be corrected even in young children to support and maintain healthy brain function.

DHA also helps form important neurotransmitters, such as phosphatidylserine.

Further, DHA is found in the retina of the eye and taking it may be necessary for maintaining normal eye function.

#### EPA

EPA is now considered to be the single most vital nutrient in the functioning of cardiovascular,

brain and nerve function in both the nutritional and medical communities.

**Cardiovascular system** – Both EPA and DHA are converted into hormone like substances called prostaglandins, and they regulate cell activity and healthy cardiovascular function.

As we get older, our bodies form less DHA and EPA, which may cause less mental focus and cognitive function.

There are other benefits to taking EPA and DHA because it also plays as a source of energy, it insulates the body against heat loss, prevents skin from drying and flaking, and cushions tissues and organs.

## Obtaining Purified Fish Oil

The problem with fish oil is that it is filled with toxins from the environment. My book [The8KeystoWellness](#) goes into the need for eliminating toxins in our bodies and discusses the importance of fish oil.

### Understanding the Molecular Distillation Process

There are basically three different kinds of fish oil on the market.

- Cod liver oil, which is produced from the liver of fish,
- Standard food grade fish oil which is oil extracted from the fatty tissue of fish, and
- Concentrated fish oil.

The difference between these three oils lies in their level and type of active ingredients and their degree of purity.

Concentrated fish oil that is pure and contains high quantities of the essential fatty acid EPA, requires somewhere in the region of 100 times more fish oil. Consequently, concentrated fish oil is a lot more costly to produce. In order to get higher levels of EPA into the oil, it has to be distilled in such a way that the different components in the oil are identified and separated so that only the EPA is left. What you get is high-grade quality oil that is rich in EPA and free from everything else, including contaminants. **You cannot get fish oil that is pure and free from toxins without it going through molecular distillation to eliminate them.**

Molecular distillation is a highly sophisticated process where the oil is spun at very high speeds and the different components within the fish oil can then be separated according to their molecular weight. In this way, mercury, for example, can be extracted out of the fish oil along with other elements not required in the final product.

The Council for Responsible Nutrition, a self-regulatory trade association of manufacturers of

fish oil products and other nutritional supplements, has established standards for fish oil specifications that are equal to or more stringent than those set by the EPA. Find a product that follows their standards if you want to get the most pure fish oil.

The companies that **use molecular distillation technology to purify their fish oil products** and comply with the highest standards for fish oil specifications are obviously the best but some companies do not do this because it saves them money and increases their profit margins. Consumers should do their due diligence when they purchase extremely low priced fish oil products and unless verification of molecular distillation can be verified, these products should not be purchased at all.

Just remember to check to see if the product you are using is distilled or not. The fewer the toxins you are consuming, the better. Be sure to find out the processing method involved in purifying your fish oil. If you can get a two-step molecular distillation process you will be ensured of ultra-purity and no toxins.

The highest quality fish oil products **contain both EPA and DHA omega-3 fatty acids**. The highest quality fish oil products will list the amount of EPA and DHA in their fish oil specifications and the source fish of the oil.

## How Much is Enough?

According to Life Extension [www.lef.org](http://www.lef.org), the average North American daily intake of EPA plus DHA is only 130 mg, falling far short of the daily 1000-2000 mg total omega-3 fatty acids recommended by some clinicians for optimal health, mood, and cognitive function. Based on clinical trials, dosages of 1000-4000 mg may offer maximal benefits for those with depressed mood.<sup>26</sup>

A serving of our Essential Source Omega-3 provides 1110 milligrams of EPA and DHA and provides the following health benefits:

## GLA (Black Currant Oil) Supplementation

- GLA supplementation can be used to assist the body to cope with a wide assortment of ailments.
- Not as susceptible to rancidity as evening primrose oil.
- It reduces pain associated with cramps and irritation, and other menstrual complaints.
- It makes the capillaries dilate to reduce the chance of blood clots and reduce blood pressure.
- It helps the body utilize insulin more efficiently so that energy levels are maintained longer.
- It helps relieve inflammation.

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