

Omega-3s and Phospholipids

How new information is helping fat overcome its bad reputation.

Fats have gotten a bad rap lately, but do they truly deserve it? Despite all the negative publicity, they are an essential part of the human diet. You say you want to increase your overall health and energy level? You want to prevent heart disease, cancer, depression and Alzheimer's? Perhaps you also want to combat rheumatoid arthritis, diabetes, Raynaud's disease and a host of other ailments? One of the most important things you can do to achieve your goal is to decrease your intake of omega-6 fats while increasing your intake of omega-3 fatty acids found in fish oils, flaxseed oil and even some specially prepared vegetable oils.

Americans Eat Too Much of the Bad Fats

What's this—eat more fat to thwart disease? Haven't we been told that fat is bad for us, and we should reduce or eliminate it from our diet? Well, virtually all would agree, eating too much of the wrong kinds of fats, e.g. hydrogenated or trans fats, almost certainly is harmful. And, unfortunately, the typical American diet provides us with far too much of the bad fats in snack, processed, fried and fast foods.

Low Fat and No Fat Diet Unhealthy

Meanwhile, ironically, a no-fat or extremely low-fat regimen also may be less than healthful. A number of people in the field now are seeking the "right-fat" diet, as opposed to the "slight-fat" diet. They tell us that all fats are not created equal. For example, say Loma R. Vanderhaeghe and Karlene Karst, authors of Healthy Fats for Life, "Fats are bad for us is another myth perpetuated by those who fail to understand how all the different types of fat affect the body. Lumping all fat into the same category has caused the disease scales to rise."

Health Promoting Omega-3s with EPA and DHA

Among the most important of the desirable fats are those containing omega-3 fatty acids. According to Lewis Harrison, author of The Complete Fats and Oils Book, health benefits associated with the two major components of omega-3s—eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)—include the following: reduced risk of atherosclerosis (a disease in which hardening of the arteries occurs); decreased risk of heart disease; minimized formation of blood clots; lowered blood cholesterol and triglyceride levels; and reduced risk of high blood pressure.

Fats Essential for Maintaining the Body's Health

In *Fats that Heal, Fats that Kill*, Udo Erasmus says that fats and oils are important structural and functional components of our bodies. Without them we could not survive. To understand why fat is essential to our health, one should recognize that electrical signals traveling through the brain get passed from one brain cell, or neuron, to the next—much like a baton being handed from one runner to another in a relay race. At each changeover, the signal must physically leave one brain cell (at a point called the synapse) and cross a gap before entering the neighboring neuron. For signals to enter a neuron, they must pass through the walls that surround them. These walls, known as cell membranes, consist almost entirely of fats, says Erasmus. And, he adds, about 20% of the material is essential fatty acids like omega-3s.

Sources report that, embedded in brain cell membranes are structures called ion channels that open to allow the flow of electrical signals into the cell or close to prevent the flow. They perform this function by changing their shape. One theory is that abundant DHA makes the membrane that holds these channels more elastic, making it easier for ion channels to change shape.

If there is not enough DHA available, the membrane substitutes a molecule called DPA (n-6), which cells regard as the next best thing. One difference between DHA and DPA (n-6) is that the latter is far less flexible. Therefore, this substitution, when it occurs, may make it harder for the ion channels to change their shape. And this in turn could hinder their control over electrical impulses trying to enter the cells.

Phospholipids - Important to Life

Yet another class of fats that is becoming increasingly attractive to nutritionists is called phospholipids (PLs) because, says Erasmus, "a chemical arrangement of the elements phosphorus and oxygen called phosphate (phospho), and two fatty acids (lipids) are attached to glycerol."

According to Erasmus, phospholipids are so important to life that "any genetic defect in an organism's ability to make or use PLs kills that organism during early prenatal development."

Phosphatidylcholine and Phosphatidylserine - Fats for the Heart, Liver, and Brain

Among the most well-known of the phospholipids are lecithin (also known as phosphatidylcholine or PC) and phosphatidylserine (PS). In the Basic Health Publications User's Guide to Good Fats and Bad Fats, Marie Moneysmith reports that phosphatidylcholine "fights cardiovascular disease and hardening of the arteries, helps the liver cope with damage caused by alcohol and other toxic substances, and aids in the digestion of fats." Phosphatidylserine, she says, is food for the brain, with research indicating that it "may counteract the effects of attention deficit disorder, Alzheimer's disease, memory difficulties and depression."

Fats and Weight-Loss

As can be seen, fats can be harmful or beneficial, depending on chemical structure and the ways they function in the body. And in The Nutrient Superbook, Jean Barilla claims that they may also be welcome—if anti-intuitive—weight-loss aids. She notes that fats can reduce the craving for food because they slow down the time needed for digestion. Fats also are needed for the absorption of key vitamins. **WF**

References:

Healthy Fats for Life by Lorna R. Vanderhaeghe and Karlene Karst
The Complete Fats and Oils Book by Lewis Harrison
Fats that Heal, Fats that Kill by Udo Erasmus
Basic Health Publications User's Guide to Good Fats and Bad Fats by Marie Moneysmith
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