

This Month's Health Spotlight...

What is Phosphatidylcholine and why is it called the "miracle molecule"?

Phosphatidylcholine is a class of phospholipids called "essential phospholipids." Although the structure is somewhat similar to other phospholipids, there are some differences that have profound effects on the health and well-being of your body.

The most distinguishing physical characteristics between simple phospholipids and phosphatidylcholine are the choline head and the polyunsaturated essential fatty acid chains that make up the tail.

The Health Promoting Power of Essential Fatty Acids

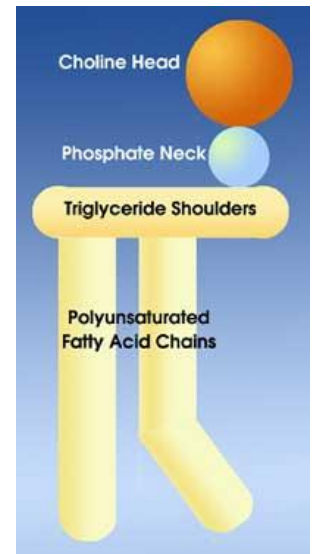
Representation of the phosphatidylcholine molecule showing the choline head attached to the phosphate group which is attached to the triglyceride shoulder. Two polyunsaturated fatty acid chains are also connected to the triglyceride shoulder. (Not shown to scale).

Essential Fatty Acids (EFAs) are necessary fats that humans cannot synthesize. There are two families of EFAs: Omega-3 and Omega-6.

Without getting too technical, the chemical difference between Omega-3 and Omega-6 is determined by the position of the first double carbon bond as counted from the end of the chain. These fatty acids cannot be manufactured by the body and therefore must be included in the diet.

Some of the many benefits of Essential Fatty Acids (EFAs) are as follows:

- EFAs support the cardiovascular, reproductive, immune, and nervous systems.*
- EFAs are required to manufacture and repair cell membranes. This enables your cells to obtain optimum nutrition and expel harmful waste products.*
- EFAs produce prostaglandins, which regulate body functions such as heart rate, blood pressure, blood clotting, fertility, conception, and play a role in immune function by regulating inflammation and encouraging the body to fight infection.*
- EFAs are also needed for proper growth in children, particularly for neural development and maturation of sensory systems, with male children having higher needs than females. Fetuses and breast-fed infants also require an adequate supply of EFAs through the mother's dietary intake.*
- EFA deficiency has been linked with serious health conditions, such as heart attacks, cancer, insulin resistance, asthma, lupus, schizophrenia, depression, postpartum depression, accelerated aging, stroke, obesity, diabetes, arthritis, ADHD, and Alzheimer's Disease, among others.*
- Omega-3s are used in the formation of cell walls, making them supple and flexible, and improving circulation and oxygen uptake with proper red blood cell flexibility and function.*
- Omega-3 deficiencies are linked to decreased memory and mental abilities, tingling sensation of the nerves, poor vision, increased tendency to form blood clots, diminished immune function, increased triglycerides and "bad" cholesterol (LDL) levels, impaired membrane function, hypertension, irregular heart beat, learning disorders, menopausal discomfort, and growth retardation in infants, children, and pregnant women.*



- Some Omega-6s improve diabetic neuropathy, rheumatoid arthritis, PMS, skin disorders (e.g. psoriasis and eczema), and aid in cancer treatment.*
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The Vital Importance of Choline:

Although humans synthesize choline in small amounts, the body does not produce a sufficient amount for its requirements. Most of the choline in the human body is located in phosphatidylcholine.

Choline and the compounds derived from it serve many vital functions.*

- Choline is used in the synthesis structural components of all human cell membranes.*
 - Choline-containing phospholipids, phosphatidylcholine and sphingomyelin are precursors for the intracellular messenger molecules diacylglycerol and ceramide.*
 - Choline is used to make the cell signaling molecules, platelet activating factor (PAF) and sphingophosphorylcholine.*
 - Choline is a precursor for an important neurotransmitter, involved in muscle control, memory, and many other functions.*
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Liposomes are made from phospholipids extracted from soy lecithin are necessary for life. In fact, every one of the trillions of cells of your body would instantly disintegrate if it were not for phospholipids. It's the stuff all cell membranes are made of.

The class of phospholipids —phosphatidylcholine — we use are called “essential” phospholipids because the body needs them but cannot synthesize them.

For nearly 40 years, researchers have studied and reported the vast health and life benefits of “essential” phospholipids — or more precisely — **polyunsaturated phosphatidylcholine (PC)**. The scope of these benefits is far beyond what can be expressed here because of very limited space, but there are thousands of published studies demonstrate that “essential” phospholipids, among many other things, can help:

- Improve and protect cell membranes damaged by free-radicals in the blood, blood vessels, liver, heart, lungs, pancreas, brain and more*
- Transport fats consumed in the diet through the blood to tissues that require them. Without adequate phosphatidylcholine, fat and cholesterol accumulate in the liver.*
- Improve blood flow and circulation*
- Improve liver and kidney function*
- Improve pancreatic function
- Improve heart function*
- Boost immunity*
- Improve memory*
- Improve libido and sexual function*

