

# Lecithin . . . it's critical to Coronary Health & Brain and Nerve Functioning

*Approximately 30% of your brain is composed of lecithin.* Of the insulating and protective sheaths that surround your brain, spine, and thousands of miles of nerves, lecithin accounts for two-thirds of their composition; and of all the muscles in your body, your heart - the hardest muscle to fatigue - has the highest lecithin content.

Lecithin is a nutrient compound which was first isolated from egg yoke in 1850 by Maurice Bobley. Since that time, it has been shown to be present in many foods. Soybeans and other legumes, grains, wheat germ, brewers yeast, and fish, as well as egg yolks are all good sources of lecithin.

Biochemically speaking, lecithin belongs to a group of nutrients known as lipids (fats, oils, waxes) and is a phospholipid called phosphatidyl choline. It is important to note that since what is commercially called lecithin is actually only one-third true lecithin. The other two-thirds is made up of other phospholipids.

It was twenty-five years ago, in 1958, that Dr. Lester M. Morrison, director of a research unit at Los Angeles County General Hospital, first published (Geriatrics, January, 1958) his findings that lecithin could be used to lower cholesterol levels. In fact, Dr. Morrison reported that "*lecithin was found to be the most effective cholesterol lowering agent tested. . .*" **He reported that 80% of his patients suffering from high serum cholesterol levels showed an average decrease of 41% in serum cholesterol after taking lecithin for several weeks.**

Instead of "blocking" absorption of cholesterol in the digestive tract as other cholesterol reducing agents did, lecithin enhanced the metabolism of cholesterol in the digestive system and aided in its transport through the circulatory system. ***The lecithin acted as an emulsifier and broke down the fats and cholesterol in the diet into tiny particles and held them in suspension, preventing them from sticking to blood platelets or arterial walls.*** It is when fats are not properly emulsified, that they become "sticky" and this is the major cause of blood clots, atherosclerosis, and coronary thrombosis. Interestingly enough, researchers have since demonstrated that atherosclerosis (blockage of the arteries) can be induced in the laboratory by either increasing the cholesterol introduced into the body or by decreasing lecithin intake.

Researchers Adams and Morgan have also shown that lecithin from a vegetable source (soybeans) is more effective than lecithin from an animal source (eggs) in accelerating re-absorption of cholesterol back into the blood stream that has adhered to the walls of blood vessels and caused blockage.

This difference is attributed to the fact that lecithin from animal sources contains high amounts of saturated fatty acids, while lecithin from vegetable sources are about 80% unsaturated fatty acids.

Another researcher, Dr. William Delamater, reported that in older people, if sufficient lecithin was present in the blood, the blood fat level returned to normal in about three hours after a high fat meal. But, if there wasn't sufficient lecithin in the blood, fat and cholesterol levels remained high for as long as twenty hours.

***Most research studies using lecithin to lower cholesterol levels have been done using 3-5 rounded tablespoons of lecithin granules daily. After a period of three to four months, significant reduction in serum cholesterol is usually observed.***

**Perhaps the most interesting new findings on lecithin concern its connection with the functioning of the brain and nervous system.**

Besides being an important factor in controlling cholesterol levels and aiding coronary health, lecithin is involved in a myriad of body functions. **Every cell of your body contains lecithin.** Lecithin is responsible for maintaining the surface tension of the cell membrane. It therefore controls what goes in and out of each cell, allowing nutrients in, or wastes out. ***Without enough lecithin, the cell wall hardens,*** thus not allowing enough nutrients in or wastes out. ***This means premature aging of cells.*** The surface tension of the cell maintained by lecithin is also responsible for transmitting nerve impulses and messages through or from the cell.

Perhaps the most interesting new findings on lecithin concern its connection with the functioning of the brain and nervous system. A key factor in proper brain and nerve transmissions is the presence of cellular substance called acetylcholine. Acetylcholine deficiencies are linked with the neurological disorders ***tardive dyskinesia*** (involuntary facial grimaces and body jerking), ***Huntington's chorea*** (the disease that killed Woody Guthrie), ***Friedrich's ataxia*** (speech impairment, irregular movements, and paralysis), ***olivaponto-cerebellas atrophy*** (wasting away of the brain), ***Alzheimer's disease*** (a mind destroying disease that starts with memory difficulties), and ***myasthenia gravis*** (progressive paralysis).

Until as recently as six years ago, medical researchers were using choline chloride to help their patients who suffered from these insidious brain disorders to produce more acetylcholine in their bodies. However, in 1977, Dr. Richard Wurtman and his colleagues at Massachusetts Institute of Technology found that lecithin (which contains phosphatidyl choline) increased serum choline levels more than three times as much as the previously used choline chloride and kept those levels raised more than three times as long. This meant that researchers had found a way to significantly raise acetylcholine levels in their patients since acetylcholine production in the brain was dependent on serum choline levels.

Dr. Wurtman's research further astounded the medical community by showing that choline was taken up directly by the brain and used almost at once to help the brain make acetylcholine. ***This***

**meant that the amount of lecithin (phosphatidyl choline) furnished by each meal could have a direct and almost immediate effect on the efficiency of the brain.** Researchers found this so surprising because it had long been believed that the so called blood-brain barrier shielded the brain from such direct influences by nutrients and substances that are excessive or lacking in the day-to-day diet. Only a few substances such as alcohol or powerful drugs were thought to be able to cross this barrier.

Dr. Allen Cott, A New York City Psychiatrist states, "I learned from the work being done at Massachusetts Institute of Technology and other places that giving 14 grams of Lecithin a day - two heaping tablespoons - just about the best thing you can do for memory."

**Scientists soon found to their delight that taking lecithin produced no negative side effects** as did other remedies prescribed for brain dysfunctions. One researcher, Dr. Barbeau, at the University of Montreal reported that patients suffering from olivoponoclebellar atrophy (wasting away of the brain) showed a 30% improvement" after only two months of taking 24 grams of lecithin daily.

### **Additional Findings on Lecithin's interaction in the Body**

- \* Without sufficient lecithin, your body cannot utilize the fat soluble vitamins A, D, E, and K. By adding an adequate amount of lecithin to your diet, you could improve your digestion and utilization of these vitamins by 100% or more if your diet is now deficient in lecithin.
- When a person exercises regularly to improve their muscle tone, the amount of lecithin contained in the muscles increases. This increase in muscle lecithin is in part responsible for the greater endurance of the muscle.
- Dr. H. Dietrich of Texas has found that often a diabetic's insulin requirements are reduced when lecithin is added to the diet.
- The importance of lecithin to the functioning of the body can be realized in the fact that during starvation, when body fat and protein are being broken down for energy, the lecithin in the body is not used for energy except as a very last resort.
- Autopsies show that multiple sclerosis patients have significantly less lecithin in the brain and myelin sheath than normal persons. The autopsies also show that the lecithin that is present in the brain and myelin sheath of these multiple sclerosis victims is essentially composed of all saturated fatty acids and no unsaturated fatty acids. Multiple sclerosis is also known to have a much higher incidence in countries where the diet is high in saturated fats.
- Psoriasis is apparently due, at least in part, to a faulty utilization of fat and is usually accompanied by a high cholesterol level. Generally, with 3 to 5 tablespoons of lecithin granules per day cholesterol goes down and psoriasis clears up.

- At Mount Sinai School of Medicine in New York, Dr. David A. Druling found that in patients with gallstones, gallstone attacks were cut in half by taking 13 grams of lecithin a day (a tablespoonful is 7.5 grams). Also the size of gallstones were greatly reduced in one patient.
- Researcher Lehninge, in his blood Biochemistry, found that proper functions in general are often attributed to a good amount of lecithin in the diet.
- Bile, produced in the liver, is stored in the gallbladder. This bile is comprised mostly of bile acids, lecithin, and cholesterol, and it is necessary in fat metabolism. If sufficient lecithin is not present in the bile, the cholesterol forms gallstones.
- Cirrhosis of the liver is no longer a disease of the heavy drinker only. Being the body's waster disposal plant, many toxic materials, like food additives, preservatives, insecticides, growth hormones, etc., all pass through the liver. Lecithin and good general nutrition readily reverses liver damage.
- Dr. Allen Cott, a New York City psychiatrist states, "I learned from the work being done at Massachusetts Institute of Technology and other places that giving 14 grams of lecithin a day - two heaping tablespoons - is just about the best thing you can do for memory." Dr. Cott also used lecithin to improve concentration and recall in learning disabled children, most of whom are either schizophrenic or autistic. "Clinical observations indicate about a 50% improvement," Dr. Cott Added.
- W.S. Hartroff, M.D., Ph.D., reported in the American Journal of Public Health that the lack of choline was found to head infants toward high blood pressure. Furthermore, it has been found that a choline deficiency induced tendency to high blood pressure can not be reversed. Interestingly enough, human milk contains lecithin while cow's milk does not.

### **Ways to Use and Take Lecithin**

Lecithin dietary supplements come in three forms: **Liquid** (thick, syrupy), **capsules and granules**. All three contain phosphatidyl choline, but the *granules contain the highest concentration* of it. It is best to take your lecithin supplement with meals since it will act synergistically with other nutrients.

All lecithin mixes well with peanut butter, tahini, spreads and sauces. Since it is an emulsifier, it will make whatever you mix it with smoother and creamier. People may find the oil naturally contained in liquid lecithin and lecithin capsules aggravates complexion problems. They should use lecithin granules. Granular lecithin has a slight nutlike taste and can be taken with any drink. It also adds a little texture to sauces and spreads. When possible, add the lecithin after the cooking is finished to help preserve the nutrients naturally present in lecithin.

Whatever form of lecithin you decide to take, be assured that you are helping both your body and mind to be at their best.