

# Get Smarter: A Powerful Brain-Boosting Supplement You've Never Heard Of

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*I report the latest in health, nutrition, wellness and healthy travel.*

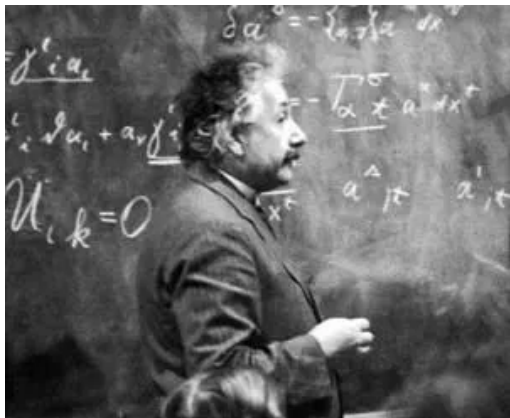
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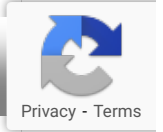
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Sharper thinking and schizophrenia prevention are two of the potential benefits of... [+]

Yesterday, more **groundbreaking research** came out demonstrating the impressive potential of the supplement phosphatidylcholine to improve brain health and smarts. Haven't heard of it? You will - it's looking to be one of the next anti-aging wonder pills.

The target in the University of Colorado study was schizophrenia - a subject both timely and topical after the mental illness-fueled massacres of the past year. Psychiatrist Robert Freedman, who also happens to be Editor of the



*American Journal of Psychiatry*, led a team of researchers who gave pregnant women phosphatidylcholine supplements in the last two trimesters of pregnancy, and after birth while they were nursing.

Then they tested the babies' response to an auditory test that's used as a "marker" for elevated risk of developing schizophrenia later in life. The choline-supplemented babies had double the chance of responding appropriately to the test, which involves analyzing their response to a series of repeated clicking sounds.

Previous studies have also documented the effects of prenatal choline supplementation on developing brains. In one double-blind study [published in Brain Research](#), the offspring of pregnant mice fed supplemental choline had better memories, learned faster, and had larger brain cells compared to those fed a normal diet. In another mouse study, prenatal choline supplementation helped babies born with Down's syndrome learn better and even [protected the mice's brains from Alzheimer's](#) later in life.

In turn, too little choline has negative effects on brain development, according to [researchers at Stanford](#), who demonstrated that when women had low blood levels of choline they were at higher risk of their babies developing neural tube defects. The reason that phosphatidylcholine is being studied so intensively for its effects on the brain is that it's a precursor of choline and acetylcholine, which play a key role in brain activity.

## **Phosphatidylcholine: The New Wonder Drug?**

Why do studies on [prenatal supplementation](#) matter to the rest of us? Because it's not just the prenatal brain that's stimulated and strengthened by phosphatidylcholine (PC). Neuroscientists have been studying the

potential of choline to prevent cognitive decline and the onset of Alzheimer's and dementia and even to regrow brain cells as we age. In several oft-cited studies by Elizabeth Gould and Charles Gross of Princeton University, phosphatidylcholine was found to stimulate the growth of new brain cells and neural connections, a process known as neurogenesis and once thought impossible after a certain age.

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Researchers are studying phosphatidylcholine's effect on numerous conditions that seem oddly unrelated to each other. That's because its value comes from its role as a key building block of cell membranes, which means it protects the cells that line the digestive tract and the liver, as well as brain and nerve cells. Phosphatidylcholine can lower cholesterol, protect the liver from disease, including hepatitis, and appears to help alcoholics stave off cirrhosis.

Doctors often recommend PC to people living with hepatitis C for its liver-protective benefits, particularly in conjunction with interferon therapy. By protecting the cells that line the digestive tract and reducing inflammation, PC may also ease conditions such as ulcerative colitis and IBS.

**Pharmaceutical Companies Eye Phosphatidylcholine for New Drugs**

Pharmaceutical companies are getting on the PC bandwagon too. PLx Pharmaceuticals of Houston has numerous products in the pipeline that use PC to protect the gastrointestinal tract from the caustic effects of NSAIDs. Called PLxGuard, the technology is being tested in an over-the-counter [aspirin product](#) and in drugs for osteoarthritis, chronic pain, gout, and other conditions.

In 2012, PLx received a [half-million-dollar-grant](#) from the Eunice Kennedy Shriver foundation to study the potential of using PC to prevent intestinal perforation in premature and low-birthweight infants being treated with IV indomethacin, an NSAID-based drug treatment used to treat a common congenital heart defect that's the leading cause of death in these babies.

Lipid Therapeutics of Heidelberg Germany is testing a phosphatidylcholine-based drug therapy to treat ulcerative colitis. The drug, [currently called, LT-02](#), completed a successful Phase IIB trial in 2011.

Weirdly, PC is also the substance used in cosmetic procedures that dissolve fat. Injected under the skin, phosphatidylcholine was first used by dermatologists to dissolve lipomas and other fatty deposits under the skin and is now used (in procedures known as body contouring) in areas like the thighs and under the eyes and, in recent studies, [under the chin](#). Numerous studies are ongoing about the safety of this procedure.

## History of Phosphatidylcholine

If you're confused and wondering about the connection between phosphatidylcholine, soy, and lecithin, a supplement you may have experimented

Supplement Facts		
Serving Size 1 Soft Gel		
	Amount Per Soft Gel	% Daily Value
Calories	10	
Calories from Fat	10	
Total Fat	1 g	2%*
Phosphatidyl Choline Complex (from soy) consisting of:	1,200 mg	†
Phosphatidyl Choline (supplies 94 mg Choline)	400 mg	†

\*Percent Daily Values are based on a 2,000 calorie diet.  
†Daily Value not established.

A close look shows 400 mg per dose (photo: Melanie Haiken)

with in the past, here's how the connection works. Phosphatidylcholine is actually a purified extract of lecithin, which contains several different phospholipids, and 10 to 20 percent of which are phosphatidylcholine. Soy is usually the source of supplemental lecithin and phosphatidylcholine.

In the past few years, as research has zeroed in on the specific benefits of phosphatidylcholine, lecithin products with higher levels of this specific phospholipid became available, and now supplements labeled phosphatidylcholine share the shelves with those labeled lecithin, or soy lecithin.

### **Natural Sources of Phosphatidylcholine**

Eggs and soybeans are the best source of choline, followed by meat (particularly liver), seeds, and nuts. But it's not easy to get enough phosphatidylcholine from your diet, particularly if you're trying to cut down on meat and eggs to control cholesterol. Most of the experiments with PC have been done with upwards of 5000 mg (the schizophrenia study used 6300 in two doses), and you'd likely need a choline-rich diet *and* a supplement to get anywhere close to that level.

Note: When buying supplements, look closely at the number of milligrams in each capsule, and the dosage. The brand I bought, labeled confusingly (see illo), turned out to contain just 400 mg per soft gel capsule so I would need to take 6 pills to get the active dose used in the schizophrenia study.

### **More Phospholipids for Brain Health**

Confusingly enough, there is another phospholipid that natural health gurus are also touting for its memory sharpening effects. Phosphatidyl serine (PS) is also being studied for its effects on mood regulation,

cognitive function, and anti-aging.

How are they the same, and how different? The thinking on this is changing so fast it's hard to keep up. Phosphatidylcholine used to be considered useful mainly for its effects on liver function, while phosphatidyl serine was studied for its effects on memory, mood, and general sharpness. Studies have shown strong potential for PS to prevent age-related memory decline, Alzheimer's, and depression. But now that choline is showing brain health benefits, it may turn out that both supplements are valuable.

If all of this interests you enough to want to delve more deeply into the neurochemistry and neuropharmacology of phosphatidylcholine and choline precursors, the research of [Richard Wurtman](#), MD, of MIT and Harvard, is fascinating and a good entry point.



**Melanie Haiken**

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