

GPC

(GlyceroPhosphoCholine)

Research shows that GPC can improve:

- Memory/mental focus function in elderly and young
- Mood status
- Growth Hormone production
- Brain recovery from stroke or injury or anesthesia
- Age-related changes in brain function
- Impairment in cognition and social behavior due to Alzheimer's or vascular dementia

INTENSIVE BRAIN SUPPORT

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GPC (also known in the research literature as L-alpha-glycerylphosphorylcholine or choline alfoscerate) is a naturally occurring molecule in all the body's cells and mother's milk. GPC is an "activated" form of choline, the difference stemming from the addition of a phosphate and glycerol group (see Figure 1 below).

Unlike Phosphatidyl Choline, GPC is water soluble, it crosses the blood brain barrier, and it requires less energy on the pathway to acetylcholine synthesis or addition of specific brain fatty acids such as DHA.¹

In humans, GPC taken by mouth is well absorbed and increases plasma levels of choline for up to ten hours. Research with animals using radio labeled GPC suggests GPC becomes incorporated into many other regulatory and structural molecules with various functions:

- a methyl group source for gene-level and other metabolic control
- as a precursor to acetylcholine, which is used in the brain as a neurotransmitter and the rest of the body as a messenger/regulator (muscle contraction, organ function, skin tone, blood vessel volume, platelet aggregation)
- for incorporation into choline phospholipids such as phosphatidyl choline and sphingomyelin in every cell membrane and myelin sheath.

At least twenty-three clinical trials have been done with GPC, all of them with positive outcomes²³:

- improvements in attention, mental focus, recall, and other higher mental functions (cognition), including in young healthy subjects,^{3,4} whether linked to poor brain circulation or of the Alzheimer's type⁵
- brain recovery following stroke or other circulatory injury⁶⁻⁸
- revitalizes master hormone functions from pituitary control (such as Growth Hormone) in the elderly⁹

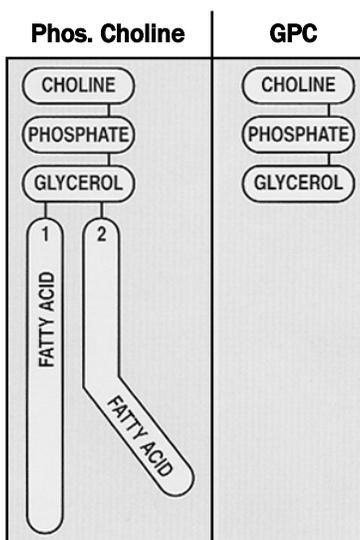


Figure 1

The typical oral doses of GPC used in most trials were 1200 mg per day in divided doses, in order to maintain the plasma levels at a high level throughout 24 hrs.

Compared with other dietary "cholinergic precursors" such as choline, phosphatidyl choline or (citicholine), GPC had superior benefits.¹⁷

GPC outperformed the nutraceutical citicholine (cytidine diphosphocholine or CDP Choline) in three direct comparison trials.¹⁸⁻²⁰

In comparison with prescription drugs GPC showed to be:

- better than Oxiracetam²¹
- similar to the Donepezil and superior to Rivastigmine, both of which are acetylcholinesterase inhibitor drugs³³

In all the trials GPC improved overall clinical symptoms such as:

- cognition, affective symptoms, and somatic symptoms such as fatigue and dizziness
- Memory, attention, other cognitive measures, and mood
- disorientation, irritability, emotional stability, and indifference to surroundings

In a study of advanced Alzheimer's patients, GPC performed roughly twice as well as acetyl-L-carnitine.²⁵

The largest stroke trial used 176 hospital centers within Italy and 2,044 patients, and showed that GPC significantly helped more than 95 percent of the patients.⁷

GPC supports other neurotransmitter systems such as dopamine, norepinephrine, and GABA⁴¹, improves EEG (ElectroEncephaloGraphic) patterns, and reduces the delta or "slow waves" which are increased during aging or accelerated cognitive deterioration.⁴³

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