



MF PLUS

# PLAQUE THERAPY

*A Natural Plant-derived Treatment with Anti-Aging Effect, for Healthy Liver, Heart, Blood Circulation & Memory Improvement*



MF PLUS Plaque Therapy help to:



Clears out plaque build-up



Rejuvenates cell membranes



Improves liver function



Maintain cell membrane integrity and fluidity



Lowers triglycerides



Increases HDL (High Density Lipoprotein)



Promotes healthy total cholesterol level



LDL (Low Density Lipoprotein) & VLDL (Very Low Density Lipoprotein)

## WHAT IS PLAQUE THERAPY

A time-tested Swiss-based treatment for Plaque build-up since the 1950s, perfected with decades of research in modern medicine and MF PLUS dedication to health and safety, Plaque Therapy is a Natural Infusion Therapy derived from Non-GMO Soy that delivers excellent results and ease of use.

## WHY YOU NEED PLAQUE THERAPY

Our blood vessels transport oxygen and vital nutrients to various parts of the body. Hindering this basic, life-supporting functionality is plaque, which accumulates over time from substances such as fat and cholesterol, causing the blood vessels to get clogged up. This results in serious and potentially fatal diseases – including strokes and heart attacks.





MF PLUS Plaque Therapy contains high purity Polyenylphosphatidylcholine, predominant circulating phospholipid in plasma, with various beneficial properties:

**Benefits:**

- Essential component of the cellular membrane (including the membranes of energy-producing mitochondria as well as neuronal and intestinal cells) that adds fluidity, promotes stability, and improves the function of transmembrane proteins.
- Remove fatty, hardened plaque from blood vessels.
- Antioxidant, cytoprotective and fluid-regulating effects.
- Integral component of lipoproteins (especially HDL) that is involved in the transport of cholesterol from the arterial walls to the liver for processing.
- A major constituent of bile, which is necessary for lipid metabolism.
- Package cholesterol and triglycerides into very-low-density lipoprotein (VLDL).
- Play a vital role in cholesterol transport and degradation and help maintain healthy blood cholesterol and triglyceride levels.
- Reduce visceral fat (also known as stubborn belly fat).



*In fact, not having enough of this nutrient can be harmful, as each cell membrane in the body is composed of 65% phosphatidylcholine.*

Deficiency of phosphatidylcholine may cause the cell membrane to be susceptible to oxidative stress and damage, causing dysfunction in the brain, digestive tract, and liver.

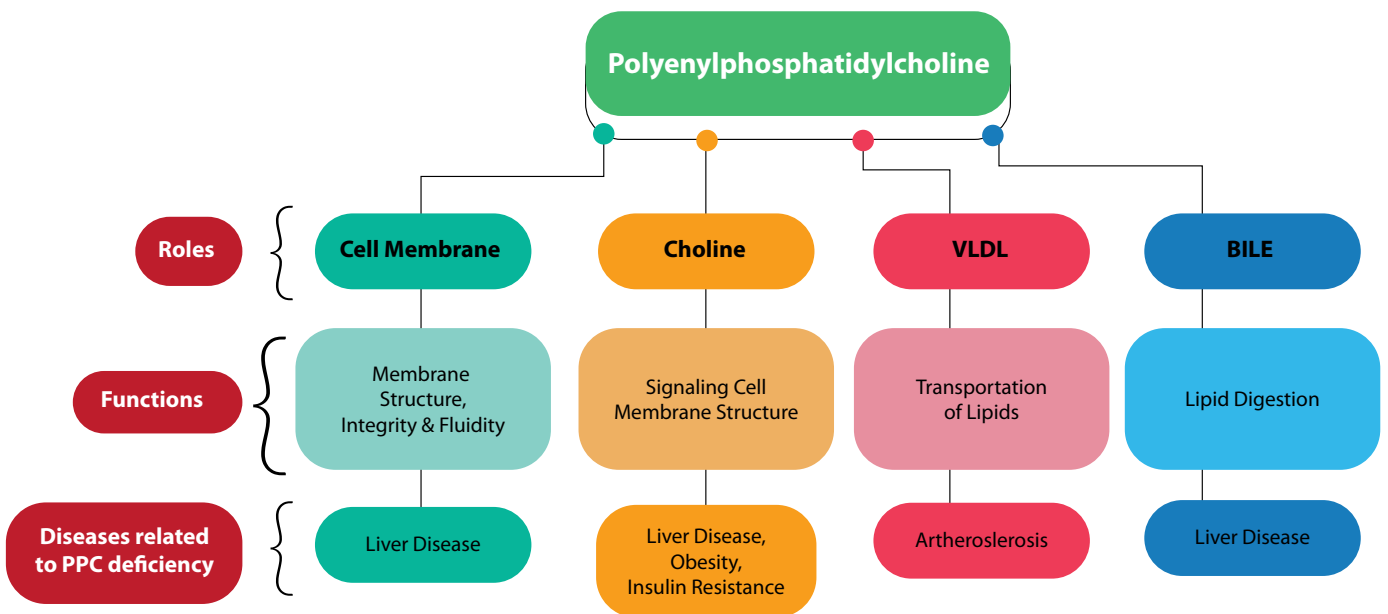
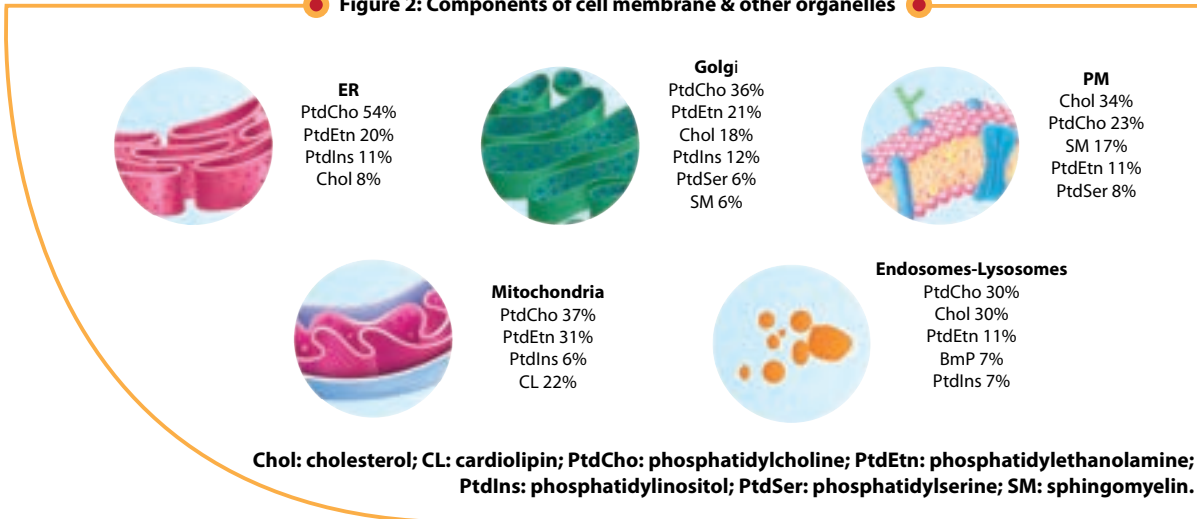


Figure 1: Functions & therapeutic application of polyenylphosphatidylcholine



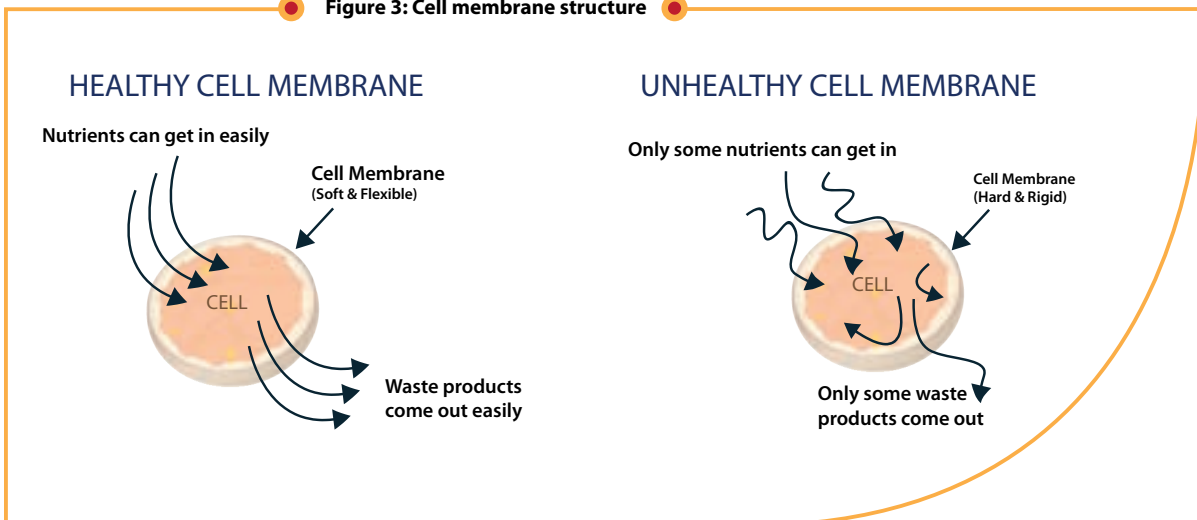
Phosphatidylcholine is an important type of phospholipid and a major structural component of cell membranes, providing integrity and structure to the cell membrane including the membranes of energy-producing mitochondria, neuronal and intestinal cells, in addition to regulating fluidity for nutrients and oxygen transport. It is also a major component of the surfactant in the lungs and the mucus in human guts.

**Figure 2: Components of cell membrane & other organelles**



Cell membrane or plasma membrane is made up of a double layer of phospholipids that acts as a barrier between the cell interior and its surroundings. The membrane is selectively permeable, allowing only small, uncharged molecules to pass through it. If the cell membrane's integrity is compromised, it will not be able to perform this essential role effectively, leading to cell dysfunctions.

**Figure 3: Cell membrane structure**



The structure and function of cell membranes are intimately essential for normal cellular homeostasis and are connected with the replication and organization of cells. Chemical and physical changes of these membranes are central to the pathological symptoms of metabolic diseases such as hypercholesterolaemia, diabetes, obesity, and atherosclerosis and the decline of cognitive functions characteristic of conditions such as Alzheimer's disease.

Under normal physiological conditions, cellular injury is commonly caused by mechanical forces and chemical or toxin assault. Adequate supplementation of Phosphatidylcholine helps to restore the damaged cellular membrane, ensuring that the cell walls remain fluid and are able to effectively regulate nutrients coming in and waste going out.



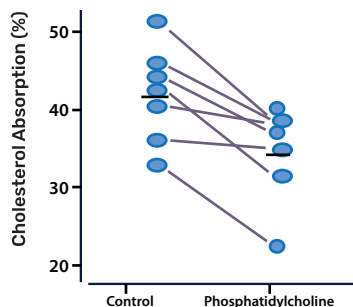
Besides maintaining the cellular membrane integrity and fluidity, Phosphatidylcholine also affects the intestinal phase of lipid metabolism. High intake of Phosphatidylcholine will interfere with the intestinal cholesterol absorption, as the intestinal cholesterol absorption highly relies on the amounts of phospholipid in gut lumen.

In humans, blood cholesterol is derived from two sources: it is either absorbed from one's diet via the intestine, or synthesized from precursor molecules in the liver. The average rate of cholesterol absorption in the gut lumen varies from 15 – 75%, with the remainder excreted in the faeces.

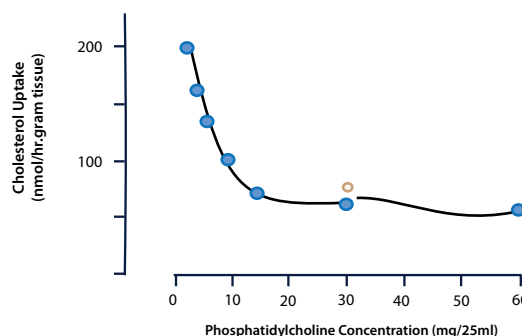
Supplementation of Phosphatidylcholine provides the body with phospholipid. Surplus phospholipid will alter the physiochemical properties of mixed micelles, inducing a shift of cholesterol molecules from the micellar phase into lamellar phase, where cholesterol absorption is lower. A long-term supplementation of Phosphatidylcholine results in reduced absorption of cholesterol and circulation of cholesterol in the system.

**Figure 4: MF Plus Plaque Therapy clinical studies**

Effect of Phosphatidylcholine on cholesterol absorption in hypertriglyceridemia patients.



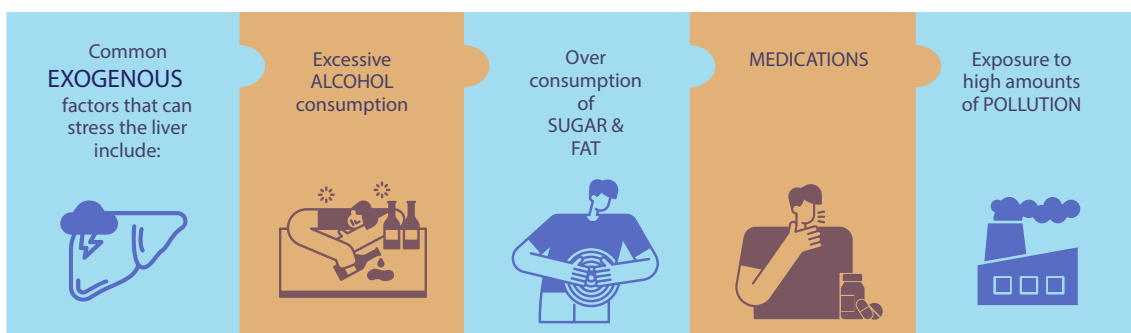
Effect of liver Phosphatidylcholine on intestinal uptake of micellar cholesterol.



The efficacy of Phosphatidylcholine in protecting the liver can be attributed to its important role in cell membranes and the regulation of VLDL formation.

Various exogenous substances can result in the liver's detoxification enzymes producing reaction metabolites that is harmful to the liver tissue.

**Therapeutic effect of Phosphatidylcholine on fatty liver disease**



The parenchymal cells, the functional tissue of liver (hepatocytes) is reliant on cell membranes, which is composed of 65% Phosphatidylcholine.

Administration of Phosphatidylcholine shows the following liver protective effects:	Reduce serum activities of liver enzyme markers released by liver tissue.
	Reduce risk of NAFLD by lessening the lipid peroxidation triggered by free radical and oxidative stress.
	Decelerate membrane damage, protecting membrane integrity.
	Diminish cell death, fibrosis, and fatty infiltration of the liver tissue.
	Increase cell synthesis of RNA and protein, suggesting liver tissue regeneration.
	Improve liver metabolism.

Besides its roles in supporting the liver cell membrane, Phosphatidylcholine also plays an essential role in lipid transportation and metabolism. Fatty liver disease can be categorized into non-alcoholic fatty liver disease and alcoholic liver disease with underlying multicausal origin such as obesity, diabetes, or alcohol abuse. Liver disease begins with the development of simple fatty liver characterized by the accumulation of hepatic triglycerides of at least 5% of liver weight, prolonged accumulation of hepatic lipid in the liver, and a variety of metabolic injuries that promote inflammation and eventually led to liver failure.

Those who have a high consumption of alcohol are prone to suffer from fatty liver as alcohol consumption increases the Phosphatidylcholine requirement, inducing a state of relative deficiency when the diet is low in lipotropic activity. Deficiency in Phosphatidylcholine has been associated with accumulation of hepatic lipid and organ dysfunction as well as increased incidence of spontaneous fatty liver. It may also increase liver cell apoptosis by the activation of activated protein kinase C-mediated cell-signalling.

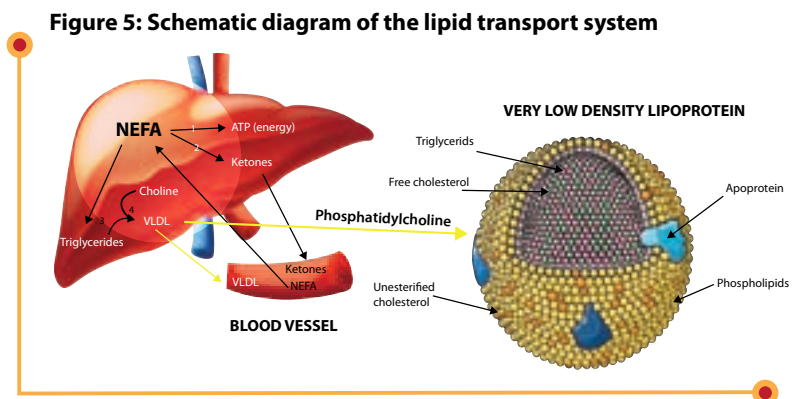
Phosphatidylcholine is capable of improving liver detoxification and is one of the major lipotropic agents, affecting primarily the mitochondria and large granules in the liver cell.

### ***Phosphatidylcholine is known for its ability to regulate the VLDL secretion.***

Phosphatidylcholine accelerates lipid transport by favouring the formation of a very low density lipoprotein, which is a vehicle to transport the lipid away from the liver to capillary beds in adipose tissue and muscle, where they are hydrolysed to provide fatty acids. These acids can then be oxidized to produce adenosine triphosphate for energy production.

Deficiency in Phosphatidylcholine will slow down fat transport, and cause the cell membrane integrity to be compromised, allowing pro-inflammatory molecules such as cytokines to leak into the hepatocytes.

This causes molecular insult that initiates the progression to steatohepatitis.



**Table 1: Plaque Oral Supplement vs Parenteral Administration**

Types	Oral supplement	Parenteral Nutrition
Administration	Oral	Intravenous (prescription basis)
Active Ingredients	Phosphatidylcholine	Phosphatidylcholine
PPC Concentration (mg)	Small dosage (900 – 1200mg)	Higher dosage (2500mg)
Absorption & bioavailability	Intestinal absorption and enters circulatory system, slow absorption rate, bioavailability ~ 60%	By-passes intestinal absorption, delivers the maximum extent of nutrients directly into bloodstream, 100% bioavailable
Onset of action	Peak level in blood after 2 – 3 hours supplementation	Immediate
Best for	Maintenance, preventive or for long term supplementation	Treatment, Loading Dose



#### GENERAL PROTOCOL

- Intravenous application

Infusion preparation:

- Plaque Therapy should be mixed solely with 250ml - 500ml 5% Glucose or Dextrose (D5W).

**AVOID MIXING WITH ANYTHING OTHER THAN GLUCOSE / DEXTROSE**

General Dosage schedule:

- < 60kg body weight, 25ml Plaque Therapy
- > 60kg body weight, start with 25ml and observe for 30minutes, should there's no adverse reaction, add another 25ml.

*\*the final concentration use for treatment depend on doctor's prescription.*

Length of the infusion:

- Please allow 90 – 120 minutes infusion time. Do not opt for a rapid infusion as it may cause a sudden drop in blood pressure.

#### INGREDIENTS

50ml contains 2500mg Phosphatidylcholine (derived from Soy).

#### STORAGE

Storage (°C): 4°C - 16°C, away from direct sunlight.

#### CONTRAINDICATION

- Plaque cannot be mixed with any other solutions and infusions other than 5% glucose or dextrose.
- Avoid rapid intravenous infusion.

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