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### **PHOSPHOLIPID THERAPY**

Toxins such as pesticides, petrochemicals, preservatives in food and skincare products, toxic moulds and heavy metals can be stored in fatty tissue in the body for a long time where they interfere with functioning of the cells, often in the nervous, brain and immune systems. The human brain is made up of 60% lipids. The main route of detoxification is via the liver into bile and then into the intestines.

If detoxification is impaired, the toxins trigger formation of very long chain fatty acids that are rigid at body temperature and they incorporate themselves into the pliable cell membrane and alter the structure of the membrane; making the membranes rigid; and therefore inefficient in its functioning.

The PK protocol is used in a range of disorders, and has developed into an effective means of detoxifying the cell membrane. This is extremely important in modern times.

Because the major groups of toxins –

- Organophosphate and organo-chlorine pesticides
- Related chemicals such as fire-retardants (PCBs, PBBs)
- Heavy metals such as lead, mercury, nickel, etc
- Preservatives in cosmetics and food

are all fat-soluble, and end up either inside lipid rich cells or in cell membranes, where they disrupt the very processes of life. Inside fat cells they are in fact relatively inert and thus safe, since this is a storage facility; it is once they are incorporated within the membrane structure that they are deleterious. These chemicals and preservatives find their way into the cell nucleus where they affect the DNA by either blocking the DNA or interfering with replication.

All membranes in our bodies, indeed in all life, are made up of two layers of lipid molecules, which require a precise composition in order to function properly.

Its main function is to allow nutrient exchange into or out of the cell as well as to allow toxins out. This is the reason why an excess of animal fats or processed fats can be harmful to our cellular structure, and why the “Essential Fatty Acids” are essential.

We have an intricate sub-cellular membrane system in each cell of our bodies. These are the membranes which we aim to detoxify so that nutrients in these sub-cellular structures can be maintained. Recent research indicates that many chronic diseases originate in these sub-cellular structures which malfunction due to toxins within the membrane structure or insufficient nutrients.

The first ingredient of the treatment is Butyrate, a short chain fatty acid which removes ammonia from the body (a problem in neurotoxic diseases), burns the very long chain fatty acids that distort the cell membranes and clears Bio toxins.

The second ingredient of the treatment is Phospholipids (EPL), essential lipids, as they occur in the membranes. When this is given orally, the 100% pure Phospho-lipids replace the damaged lipids in the membrane and it also removes the toxins from the membrane. Literature suggests that as much as 5% of total cell lipids can be exchanged in one treatment. EPL detoxifies the liver and biliary tree while stabilizing and nourishing the cell membrane.

The third part of the treatment is Glutathione. This is an amino acid that is crucial for detoxification in the liver. It also stimulates secretion of bile. It is given after the Phospholipid as it uses the lipid to enter into the cell more efficiently and to bind the toxins released by the lipid membrane. It has been shown that patients with Parkinson’s disease are deficient in Glutathione.

Next we give methylation factors to support the methylation process.

Vitamin C is added in some patients if indicated.

The Oral protocol is as effective as the intravenous protocol, but may take a little while longer to kick in and is slow and gentle.

In paediatric patients the oral protocol is sufficient, but for adult patients with dread diseases boosting the treatment with intravenous treatment is sometimes indicated.

## **SUPPLEMENTATION**

We advise patients to have an amino acid and essential fatty acid assay done and further supplementation is given according to individual need. Prior to commencing the full oral PK Protocol, it is important to look at cell membranes, DNA, and other structures, such as mitochondrial function so that baselines can be established.

One of the mainstays of the therapy is to restore the omega 6 and omega 3 fatty acid ratio in the body, as it is the hallmark of restoring the lipid membrane. We do it according to the research done by Yehuda. He determined that the optimal ration of omega 6 to omega 3, is 4:1.

It has also been proven that if the wrong balance of oils is taken it can disrupt the critical functioning of the Essential fatty acids.

For further information about the PK Protocol, please read the Physician's version of

The Detoxx Book – Dr. Patricia Kane et al – 2007 – [www.bodybio.com](http://www.bodybio.com)