Lipid Replacement Therapy: a Functional Food Approach with New Formulations for Reducing Cellular Oxidative Damage, Cancer-Associated Fatigue and the Adverse Effects of Cancer Therapy

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Abstract
Background:
Cancer-associated fatigue and the chronic adverse effects of cancer therapy can be reduced by Lipid Replacement Therapy (LRT) using membrane phospholipid mixtures given as food supplements.

Methods:
This is a review of the published literature on LRT and its uses.

Results: LRT significantly reduced fatigue in cancer patients as well as patients suffering from chronic fatiguing illnesses and other medical conditions. It also reduced the adverse effects of chemotherapy, resulting in improvements in incidence of fatigue, nausea, diarrhea, impaired taste, constipation, insomnia and other quality of life indicators. In other diseases, such as chronic fatigue syndrome, fibromyalgia syndrome and other chronic fatiguing illnesses, LRT reduced fatigue by 35.5-43.1% in different clinical trials and increased mitochondrial function.

Conclusions: LRT formulations appear to be useful as non-toxic dietary supplements for direct use or placed in functional foods to reduce fatigue and restore mitochondrial and other cellular membrane functions. Formulations of LRT phospholipids are suitable for addition to various
food products for the treatment of a variety of chronic illnesses as well as their application in anti-aging and other health supplements and products.

**Keywords:** nutritional supplements, NT factor®, Coenzyme Q₁₀, cancer fatigue, mitochondria,