

**BODYBIO**

# Longevity Protocol



## Lipid Replacement Therapy (LRT) and Its Role in Supporting Longevity and a Longer Healthspan

Lipid Replacement Therapy (LRT) is an emerging approach that harnesses the power of phospholipids to promote longevity and improve overall healthspan. Phospholipids, the building blocks of cell membranes, are essential for maintaining cellular integrity, signaling, and function. As we age, cellular membranes can undergo changes, leading to impaired cellular function and contributing to age-related conditions. LRT aims to restore and maintain cellular membrane health, providing a range of benefits that support longevity and a longer, healthier life.

### Cell Membrane Integrity

LRT utilizes specially designed phospholipid supplements to supply cells with essential phospholipids. By incorporating these phospholipids into cell membranes, LRT helps enhance their structural integrity and fluidity. This, in turn, supports cellular function, allowing cells to carry out their tasks more efficiently.

## Anti-Inflammatory Properties

Certain phospholipids used in LRT, such as phosphatidylserine (PS) and phosphatidylcholine (PC), possess anti-inflammatory properties. Chronic inflammation is closely linked to aging and age-related diseases. By including these anti-inflammatory phospholipids in LRT, we can potentially mitigate some of the detrimental effects of inflammation, contributing to improved healthspan.

Lipid Replacement Therapy (LRT) offers a promising approach to support aging individuals by addressing inflammation and reactive oxygen species (ROS) associated with the aging process. As we age, chronic inflammation, often termed “inflammaging,” and oxidative stress from ROS play pivotal roles in age-related health challenges.

LRT focuses on enhancing cellular membrane health through the targeted use of phospholipid supplements. By replenishing essential phospholipids, LRT helps maintain the structural integrity of cell membranes, which becomes increasingly important as we age.

## Mitigating Inflammaging

By optimizing cell membrane function, LRT may help regulate the immune response and reduce the chronic low-grade inflammation seen in aging individuals. Balancing membrane composition with specific phospholipids could positively impact immune signaling and attenuate inflammaging.

## Antioxidant Support

LRT can play a significant role in combating oxidative stress. Phospholipids used in LRT, such as phosphatidylcholine, acts as an antioxidant. Supporting antioxidant defenses through LRT helps neutralize ROS and minimize oxidative damage to cellular components. Phosphatidylcholine (PC) plays a crucial role in protecting polyunsaturated fatty acids (PUFAs) within the cell membrane. PUFAs, such as omega-3 and omega-6 fatty acids, are essential components of cell membranes and are particularly vulnerable to oxidative damage due to their multiple double bonds. Oxidative damage to PUFAs can lead to lipid peroxidation, which destabilizes the cell membrane and compromises its function.

## Cellular Signaling and ROS

LRT can influence cell signaling pathways related to ROS production. By fine-tuning the membrane lipid environment, LRT may promote a balanced response to ROS generation, reducing excessive oxidative stress.

\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

## Improving Cellular Function

Enhanced cell membrane integrity from LRT can bolster cellular function and resilience. Properly functioning cell membranes facilitate the transport of nutrients and waste, promoting cellular health and supporting an optimal response to inflammatory challenges.

## Mitochondrial Health

LRT has shown incredible promise in supporting mitochondrial function. By maintaining healthy mitochondrial membranes, LRT may contribute to a reduction in ROS production.

## Detoxification Benefits

Phospholipids play a vital role in detoxification processes within cells. Phospholipids facilitate the removal of toxins and waste products, supporting the body's natural detoxification pathways. By supporting cellular detoxification, LRT reduces the burden of accumulated toxins and promotes better overall health and improves health span.

## Brain Health and Cognitive Function

Phospholipids, especially, are essential for brain health and cognitive function. Neurodegeneration is a concern with aging, but LRT supports brain health, memory, cognitive performance and supports the prevention of brain atrophy.

## Antioxidant Support

Phospholipids used in LRT, such as phosphatidylcholine (PC) have antioxidant properties. Antioxidants help combat free radicals that contribute to cellular damage and aging. By including phospholipids, like phosphatidylcholine in LRT, we can bolster the body's antioxidant defenses.

## Cellular Signaling

Phospholipids are involved in cellular signaling pathways, influencing critical cellular processes like gene expression and cellular communication. LRT helps support these signaling mechanisms, promoting improved cellular function and longevity.

Lipid Replacement Therapy, through its focus on cellular membrane health, offers a holistic approach to support longevity and enhance overall healthspan.

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# Recommended Labs to Assess Cellular Health

- BodyBio RBCFA Test
- Genova Diagnostics Ion Panel
- IGL Germany

## Recommended Protocol for Longevity

PRODUCT	CLINICAL OBJECTIVE	DOSING RECOMMENDATIONS
BodyBio Phospholipid Complex (PC)	<ul style="list-style-type: none"><li>• Enhances Cell Membrane Fluidity*</li><li>• Supports Nutrient Absorption*</li><li>• Reduces Cellular Toxin Load*</li></ul>	1-2 TBSP in divided doses.  Start low and slow. It may take 3-4 weeks to work up to a therapeutic dose.
BodyBio Balance Oil	<ul style="list-style-type: none"><li>• Optimizes Omega-6/Omega-3 Ratio*</li><li>• Reduces Chronic Inflammation*</li><li>• Supports Mitochondrial Health*</li></ul>	3 TBSP in divided doses.
BodyBio TUDCA	<ul style="list-style-type: none"><li>• Supports Fat Digestion*</li><li>• Reduces Cellular Stress*</li><li>• Enhances Liver Detoxification*</li><li>• Promotes Insulin Sensitivity*</li><li>• Offers Neuroprotective Benefits*</li></ul>	1-2 capsules daily with food.  Start with 1 capsule and work up to 2 capsules if well tolerated.
BodyBio Butyrate	<ul style="list-style-type: none"><li>• Heals Leaky Gut*</li><li>• Regulates Immune System Function*</li><li>• Supports Mitochondrial Health*</li><li>• Enhances Liver Detoxification*</li><li>• Regulates Metabolic Health via GLP-1 Pathway*</li><li>• Offers Neuroprotective Benefits*</li></ul>	2-4 capsules daily with food.  Start with 1 capsule and work up to 2-4 capsules if well tolerated.
BodyBio Liposomal Glutathione	<ul style="list-style-type: none"><li>• Powerful Antioxidant*</li><li>• Regulates Immune System Function*</li><li>• Enhances Liver Detoxification*</li><li>• Reduces Lipid Peroxidation*</li></ul>	1-2 capsules daily with or without food.

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## REFERENCES:

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<https://www.semanticscholar.org/paper/Lipid-Replacement-as-an-Adjunct-to-Therapy-for-and-Nicolson/102196d6bb227eb6b0d7b6df2cee6b961a8791bf>

<https://thequantifiedbody.net/repair-mitochondria-lipid-replacement-garth-nicolson-phd/>

## Questions? Meet with our clinical team!



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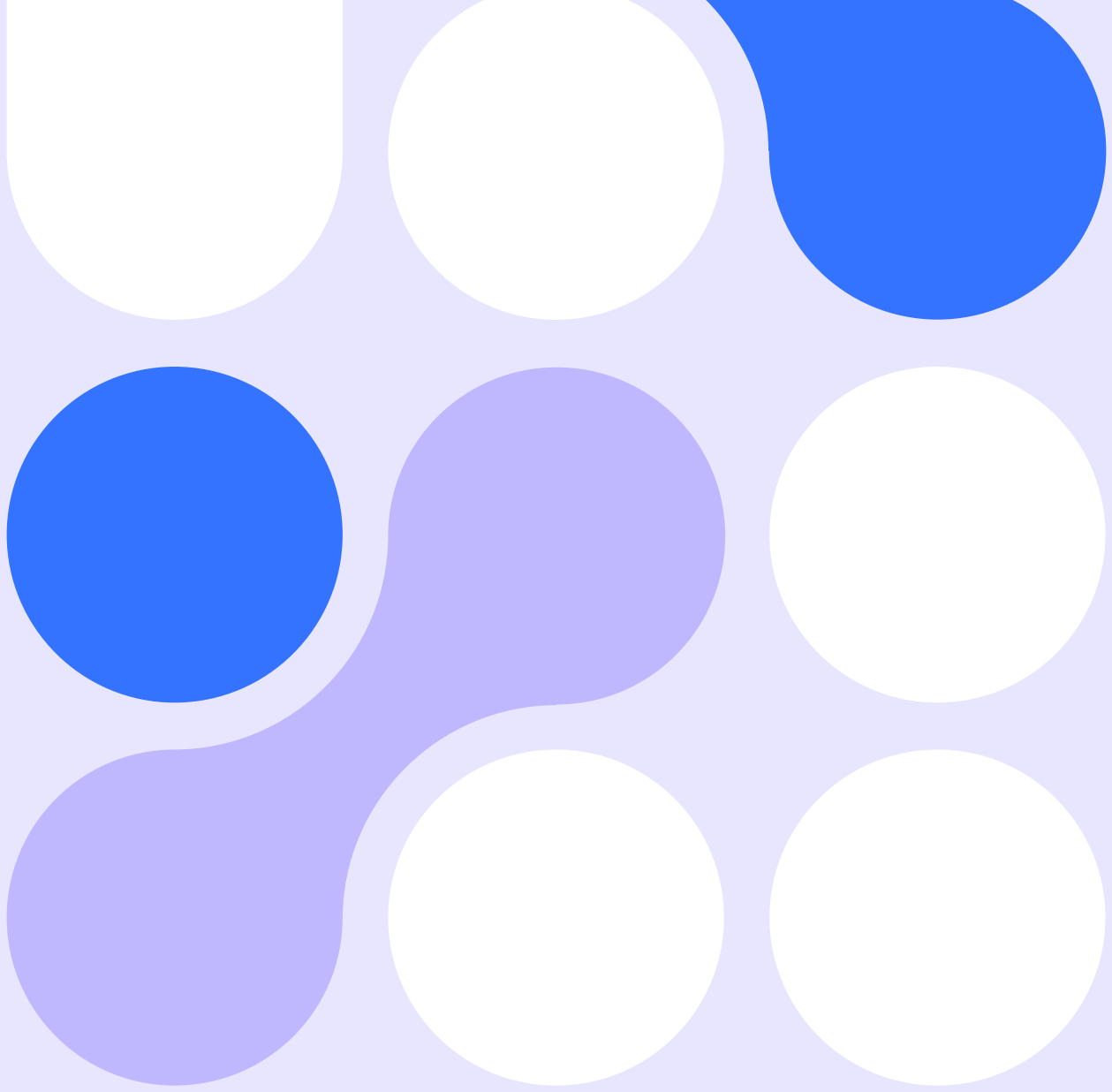
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