

What if your dietary supplement could also enhance the function of other supplements?



*It's long been suspected that Intelligent Medicine favorite **NTFactor®** had benefits beyond supporting mitochondria and alleviating fatigue—now here's proof!*

—Dr. Ronald Hoffman

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We are all bombarded with information on how individual dietary supplements can enhance health, reduce age-related degeneration and help reduce symptoms associated with various health conditions. But what if an oral supplement could also improve the function of other supplements, in addition to its own actions? **NTFactor Lipids®** is just that dietary supplement. In addition to its own benefits in reducing the symptoms related to changes caused by aging and health conditions, this all-natural dietary supplement can improve the ability of other supplements to exert their own

actions.

How does NTFactor Lipids® improve the effects of other dietary supplements?

Humans have evolved with digestive and transport pathways that sequester important nutritional molecules, absorb them and transport them to tissues and cells. This starts in the lining of the small intestine where most nutrients are transported into epithelial cells. This type of transport can be modeled in the laboratory by the use of intestinal epithelial cells (Caco-2 cells). The ability of these Caco-2 cells to transport nutrients has been found to be similar to the process in the human small intestine.

When NTFactor Lipids® was added to nutrients in the laboratory model of small intestine epithelial cell transport, the NTFactor Lipids® increased the ability of the nutrients to be transported and thus be available for cells. This transport across epithelial cells is known as bioavailability. The Caco-2 epithelial model was used to see if NTFactor Lipids® could increase the bioavailability of three commonly used nutraceuticals: quercetin, curcumin and coenzyme Q10. The NTFactor Lipids® increased the transport, or bioavailability, of the three supplement nutrients 2-fold above controls [1].

Therefore, combining various nutrients with NTFactor Lipids® should enhance their absorption and value to the user. This may be particularly significant when taking a multi-vitamin, mineral, cofactor supplement like Propax with NTFactor Lipids®. Propax was shown to significantly improve fatigue and other health parameters in middle-aged subjects [2]. In conclusion, adding NTFactor Lipids® to your daily regimen will likely enhance the effectiveness of the supplements you take, while providing the added benefits of the Lipids themselves.

How does NTFactor Lipids® work to improve health?

Each cell in our body is surrounded by a physical barrier called the cell membrane, which separates our cells from each other and from the environment. There are also barriers inside cells that divide different internal compartments known as organelles, which contain and manage cellular energy production (mitochondria), genetic machinery (nucleus), synthesis of new proteins (endoplasmic reticulum), degrading waste (lysosomes), bringing in materials from outside the cell (endosomes), and more. These organelles are all surrounded by intracellular membranes that separate them from the cell's interior and other organelles. All of these organelle membranes have in common a lipid matrix that is composed of a specific class of membrane phospholipids called glycerolphospholipids. Other components of cellular membranes, such as proteins and glycoproteins, are sandwiched into the lipid matrix of cellular membranes where they provide many needed functions, such as platforms for chemical and enzyme reactions, and cell messenger mediators [3]. Unfortunately, these membrane phospholipids are very sensitive to damage that occurs during aging and as a consequence of various health conditions. When these critical molecules are damaged, cells can't function normally. This is where Membrane Lipid Replacement comes in—to repair the damage to cellular membranes and return cellular function to normal states.

One classic example of this is the cellular energy production, which is critical in every aspect of cell function from the transport of materials into cells to the function of organelles such as mitochondria. Mitochondria provide up to 90% of

cellular energy function, and this naturally declines during aging; when you reach 80-90 years old, you have only about half of the mitochondrial energy production compared to a 30-year-old. This is primarily but not completely due to the damage to the inner mitochondrial membrane where critical membrane lipids are necessary for mitochondrial function. When mitochondrial function is impaired, we experience fatigue and malaise, among other effects. However, when membranes are repaired with NTFactor Lipids® mitochondrial and cell function can return to more normal states. We can see this when fatigued individuals take NTFactor Lipids®, and they eventually find that their fatigue and other health problems are significantly reduced [4, 5].

References

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